# COTTON

SERVING THE

# Textile Industries

JUNE, 1943

COPYRIGHT DEPOSIT.

IN THE AIR MARQUETTE ALL-WEATHER WINDSHIELD WIPERS...

ON LAND NITRALLOY BEARINGS AND PINS...

ON THE SEA HYDRAULIC ISOCHRONOUS GOVERNORS AND OVER-SPEED TRIPS FOR DIESEL ENGINES

MARQUETTE ROLLER-BEARING SPINDLES SAVE POWER AND LUBRICATION . . . INCREASE PRODUCTION. The Marquette METAL PRODUCTS CO.

CLEVELAND, OHIO

FOR EXCELLENCE

JUN 21 1943

Copy 1

JUN 21 1943

Photo Courtesy U. S. Rubber Company

# COTTON to the Rescue!

LAST word in life-saving apparatus, and capable of supporting the 7-man crews of our bombers, these self-inflating rafts are made largely of cotton duck.

To meet our Nation's war demands not only for cotton but for all kinds of fabrics, mill operators everywhere are maintaining their textile machinery at peak output by lubricating with Texaco.

*Texaco Spindura Oils* for example, effectively cushion spindle vibration, resist hunting and lagging, thus assuring more uniform tension and twist, and permitting higher speeds and heavier packages . . . fewer ends down and less stock spoilage.

So effective have Texaco lubricants proved that they are definitely preferred in many important fields, a few of which are listed in the panel.

A Texaco Lubrication Engineer will gladly cooperate in the selection of the most suitable lubricants for your equipment. Just phone the nearest of more than 2300 Texaco distributing points in the 48 States, or write The Texas Company, 135 East 42nd Street, New York, N. Y.

### THEY PREFER TEXACO

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

★ More locomotives and railroad cars in the U. S. are lubricated with Texaco than with any other brand.

★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated and fueled with Texaco than with any other brand.

TEXACO

REG. T.M.

## TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN FRED ALLEN EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

COTTON is published monthly by W. R. C. Smith Publishing Company, Dalton and Atlanta, Ga., U. S. A.
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Entered as second-class matter at the Post Office, Dalton, Ga., under the Act of March 3, 1879.

Volume 107 Number 6

You Are Setting Up

A Special Reserve in Cash

For the Purchase of the New High Speed Looms
You Must Have After the War

You Can

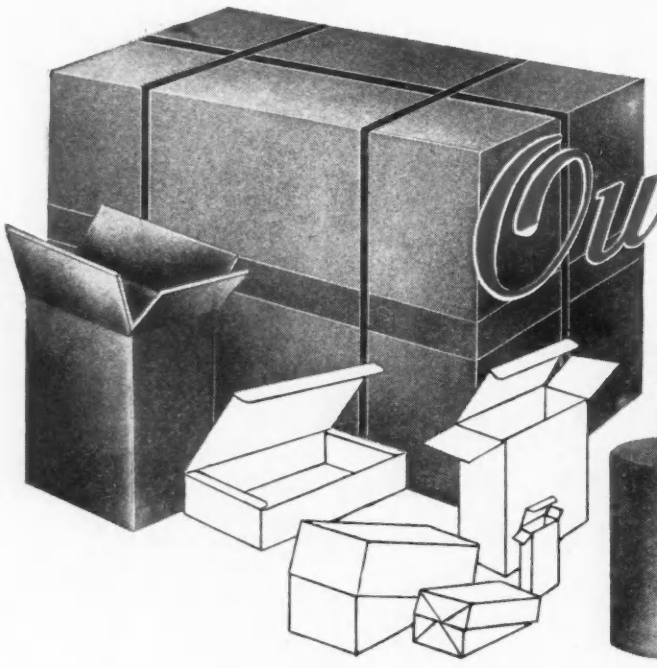
Help Yourself

and

Help Your Country

By Investing That Reserve in
The Next Issue of War Bonds

DRAPER CORPORATION



# Our 75th Year . . .

## 1868 - 1943

- CORRUGATED SHIPPING CASES
- FOLDING CARTONS
- FIBER DRUMS
- MULTI-WALL BAGS
- GARMENT BAGS
- GROCERY BAGS
- TEXTILE PACKAGING SPECIALTIES

In the seventy-five years since Apaco was founded we have seen America face wars, panics, depression and disaster . . . and from each crisis emerge stronger than before!

Today, our country is engaged in a desperate struggle to determine whether the freedom we have created and cherished shall survive or perish.

The Diamond Anniversary which the Atlanta Paper Company celebrates this year is of small importance compared to the all-embracing immensity of that issue. Yet . . . it is only proper that we should voice our faith in the future.

***APACO was founded and built on Faith . . . Faith in the continued growing greatness of our country. And, we confidently believe that America will emerge again, steeled by adversity and strife, to enter a new era of glorious achievement!***

# Atlanta PAPER Company

Branches:
AUGUSTA PAPER CO., Augusta, Ga.
GEORGIA-ALABAMA PAPER CO., Columbus, Ga.
VOLUNTEER STATE PAPER & BOX CO., Knoxville, Tenn.

Associates:
MEMPHIS PAPER CO., Memphis, Tenn.
LITTLE ROCK PAPER CO., Little Rock, Ark.

★ BUY MORE WAR BONDS

ATLANTA, GEORGIA

# Westvaco
## CAUSTIC SODA

*Uniformly High Quality*
*Prompt Delivery*

**LIQUID · FLAKE · SOLID**

Through 1943 we have every reason to believe that we can continue to provide the full requirements of old and new users of Westvaco Caustic Soda, both as to quantity and quality.

Westvaco CHEMICALS

WESTVACO CHLORINE PRODUCTS CORP.

CHRYSLER BUILDING • NEW YORK, N. Y.

Chicago, Ill. Greenville, S. C. Newark, Calif.

Available in *Limited Quantities Only*

# *It's Welded*

## WEARS 3 TO 4 TIMES LONGER!

The *Finnell Steel-Wool Pad* wears so much longer because it wears *evenly* -- the result of balanced performance accomplished through welded construction. *It gets all the wear out of all the material!* . . . and prevents tearing and shredding of the pad.

Because welded construction assures uniform contact, the *Finnell Steel-Wool Pad* must and does do a better job in less time. It's the perfect pad for dry cleaning and burnishing waxed floors to a safer, wear-resisting finish . . . *in one labor-saving operation!*

*Finnell Pads* are self-adjusting, and can be used on any fibre brush, with any disc-type machine. *Sizes:* 5, 7, 11, 13, 15, 18, and 21-inch. *Grades:* No. 0 -- *Fine*, for cleaning, polishing, and burnishing. No. 1 -- *Average*, for cleaning and scrubbing. No. 2 -- *Coarse*, for use on rough floors. No. 3 -- *Very Coarse*, for removing paint and varnish.

For literature or consultation, phone or write nearest *Finnell* branch or Finnell System, Inc., **1306** East Street, Elkhart, Indiana.

THE *Finnell* STEEL-WOOL PAD

★

THE 600 SERIES *Finnell*

Steel-wools, scrubs, polishes, waxes, burnishes, sands, and grinds. 5 sizes. Equipped with *Feather-Touch* Safety Switch. Available to essential users qualifying on Application Form PD-722.

**FINNELL SYSTEM, INC.**

*Pioneers and Specialists in*

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

# *Into the Dusk*

loaded with bombs and block busters.

Of course these bombs require enormous tonnage of toluene etc., and materially cut into the crudes for dyestuffs.

There are, however, ample supplies for all military requirements and, with some conservation, all civilian necessities.

There are many ways of conserving dyes without sacrificing quality. Our research has specialized for years in new dyes which lower costs and short cut operations with increased fastness to both light and washing. Your problems are welcomed.

**ALTHOUSE CHEMICAL CO.**
**READING, PA.**

# Conserve It With Leather Belting In Modern Group Drives

Power is one of America's most vital war weapons. It is the duty of every manufacturer to make the most efficient use of it . . . to waste none. Leather Belting, applied to Modern Group Drives, has proved its ability to conserve power. At the same time it makes possible the highest rate of production from any group of machines.

In actual cases where Modern Group Drives with Leather Belting have replaced individual motor drives, the following results have been recorded:

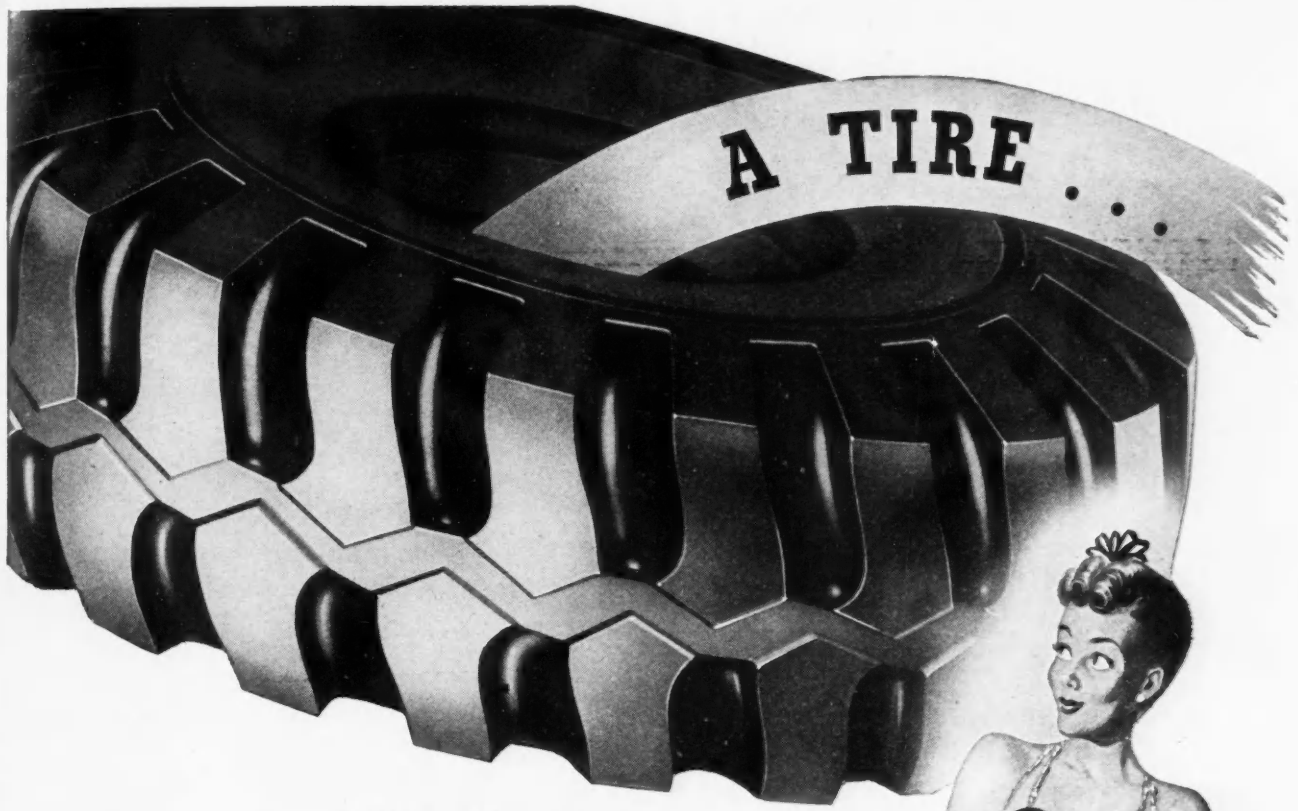
- **drive efficiency has been raised 4 to 11%**
- **power factor has been increased 6 to 26%**
- **connected hp. has been reduced 11 to 45%**




*Leather Belting in Modern Group Drives also saves large quantities of copper and steel, conserves manpower, reduces shutdowns and cuts maintenance. Your Leather Belting supplier will give you the complete facts. Also be sure to ask him for your copy of the booklet "How To Get The Most From Your Leather Belting." If you prefer, write direct to*

**AMERICAN LEATHER BELTING ASSOCIATION** **53 Park Row, New York, N. Y.**

*Rely on Leather Belting*



# A TIRE . . .

## *and* ATTIRE

That lovely rayon you're accustomed to seeing in a wisp of lingerie or a filmy evening dress is proving the toughest, most durable yarn for tire cord that's ever come along the pike.

Industrial's "Continuous Process" yarn—a yarn the trade knows well for its unvarying uniformity and its virtual absence of knots and broken filaments—has the characteristics that make a better tire and better fabric too.

For the time being, most of this yarn is off to the wars—going into tires that must stand the gaff of high-speed bomber take-offs and landings—into supply parachutes, into electric wire insulation, into dozens of other war-born products.

But don't think we've forgotten you and your need for undies and linings and dresses and the like. We're supplying as much fine yarn as we can for those things too. But once peace comes, just watch rayon really step out, and dazzle you with its new cloths and weaves and textures. When that great day dawns, Industrial's technical skill will keep Industrial products as far ahead then as "Continuous Process" yarn is today.

Manufacturers of "CONTINUOUS PROCESS" RAYON YARN and Spun-lo KNIT RAYON CLOTH

*Reg. U. S. Pat. Off.

# WHY THE SPINNING FRAME GREMLINS QUIT!

"I've been beating my brains out on those rolls and what happens?" complained Hard Ends. "That Spinna Calf acts as if nothing had happened at all. Springs right back without a *trace* of a groove."

"Hollowing-Out" was equally dejected. "I've never seen anything like it for resiliency. What's the explanation?"

"I understand," offered Eyebrows, "it's because Spinna Calf is triple-resilient."

*"Triple-resilient? What does that mean?"*

"It's sort of complicated," admitted Eyebrows. "But here — Spinna Calf is

made up of fibres. The fibres are twisted together into bundles. And the bundles are twisted together, every-which-way, leaving air in-between. So what you've actually got is a whole bunch of air cushions surrounded by springy fibres."

*"And that's why Spinna Calf is triple-resilient?"*

"Sure. When Spinna Calf is depressed, it 'gives' in three respects. The air moves out of the way. The individual fibres compress or bend. And the whole network of fibres adjusts itself, distributing the strain. Then — when the pressure is relieved, what happens? The air returns. The fibres spring back to original length. And the bundles recover their formation. No harm done — no permanent after-effects."

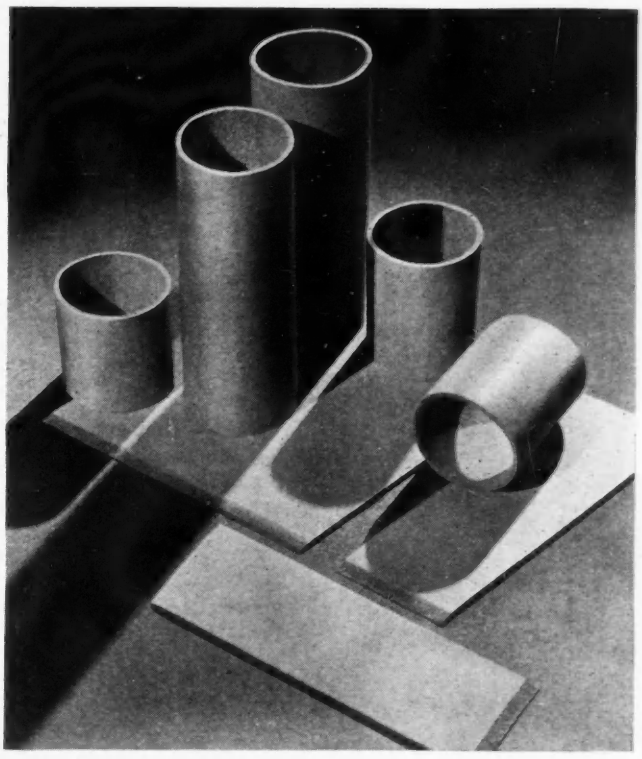
*"And this is a special property of Spinna Calf?"*

"Yes. Being calfskin, Spinna has the ability to 'give', then recover. Being Spinna, it has a stronger wearing surface on top of its cushion. And being Lawrence, it has a more positive drafting surface, 'no-static' finish, and more dependable uniformity."

A. C. LAWRENCE LEATHER CO. RELIABLE LEATHERS PEABODY MASS

*Lively* **SPINNA CALF** *It's Triple Resilient*

**ROLL COVERING**



## *Used on more Spinning and Roving Frames than any other Brand!*

Why will you find more spinning and roving frames running with Lawrence Chrome Leather aprons than with any other brand? Why do more mills specify Lawrence Chrome for apron replacements than any other brand?

- Lawrence Chrome lasts longer than any other type, reducing costs, saving replacement time.
- Lawrence Chrome holds its shape longer—no lengthwise, *no lateral* stretch to cause belling.
- Lawrence Chrome is not affected by oil—unlike oil-resistant materials which deposit oil spots on the yarn.
- Lawrence Chrome is the superior leather tannage for drafting—a natural drafting surface, smooth, but high in frictional characteristics.
- Lawrence Chrome reduces troubles due to static.

And, of course, Lawrence Chrome aprons are more convenient—can be replaced individually.

Most important of all—apron manufacturers know that Lawrence quality is more uniform. They can cut their aprons with greater assurance of giving you satisfactory performance.

Lawrence Chrome Leather is standard with Whitin Machine Works. Specify Lawrence Chrome on your next order to your apron supplier . . . you can be sure of getting the best possible drafting results.

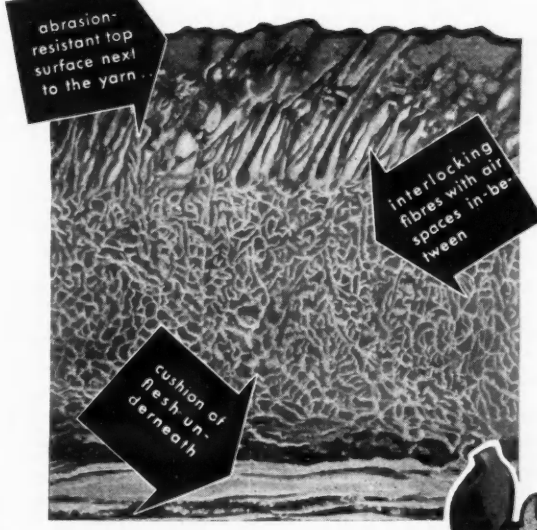
**LAWRENCE CHROME LEATHERS**

*1st Choice for Aprons*

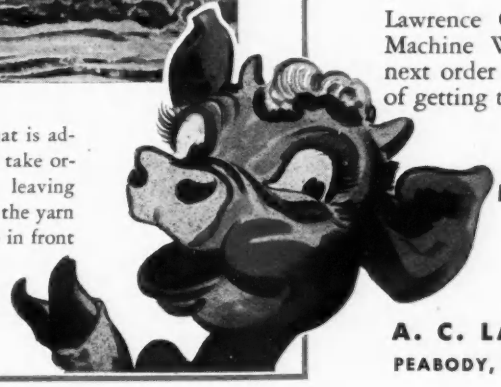
**A. C. LAWRENCE LEATHER COMPANY**

**PEABODY, MASS.** **GREENVILLE, S. C.**

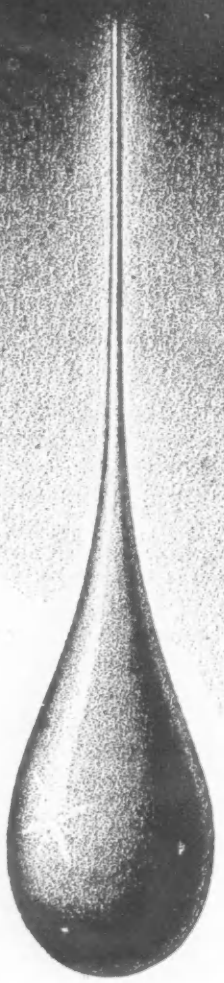
*Spinna Calf*.. **AIR CUSHIONS IN A NETWORK OF TOUGH, SPRINGY FIBRES**


abrasion-resistant top surface next to the yarn
interlocking fibres with air spaces in-between
cushion of flesh underneath

"If you want roll covering that is adjustable to all counts . . . can take ordinary hard ends without leaving grooves . . . and stays kind to the yarn for up to 18 months and more in front line positions . . . then Spinna Calf—the most generally used calfskin—is your best choice."



# YOUR MACHINES MUST LAST !



PROTECT THEM WITH

## OIL WITH GUTS!

**Proper lubrication will prolong the life of textile machines which must be kept busy providing fabrics for our armed forces and the home front.**

**Knowing when to oil and what oil is best fitted for the job requires careful study The Houghton Man can help you both ways. He can suggest a complete lubrication plan—or can recommend an oil for trouble spots in your mill, such as comb boxes, worn looms or spindles.**

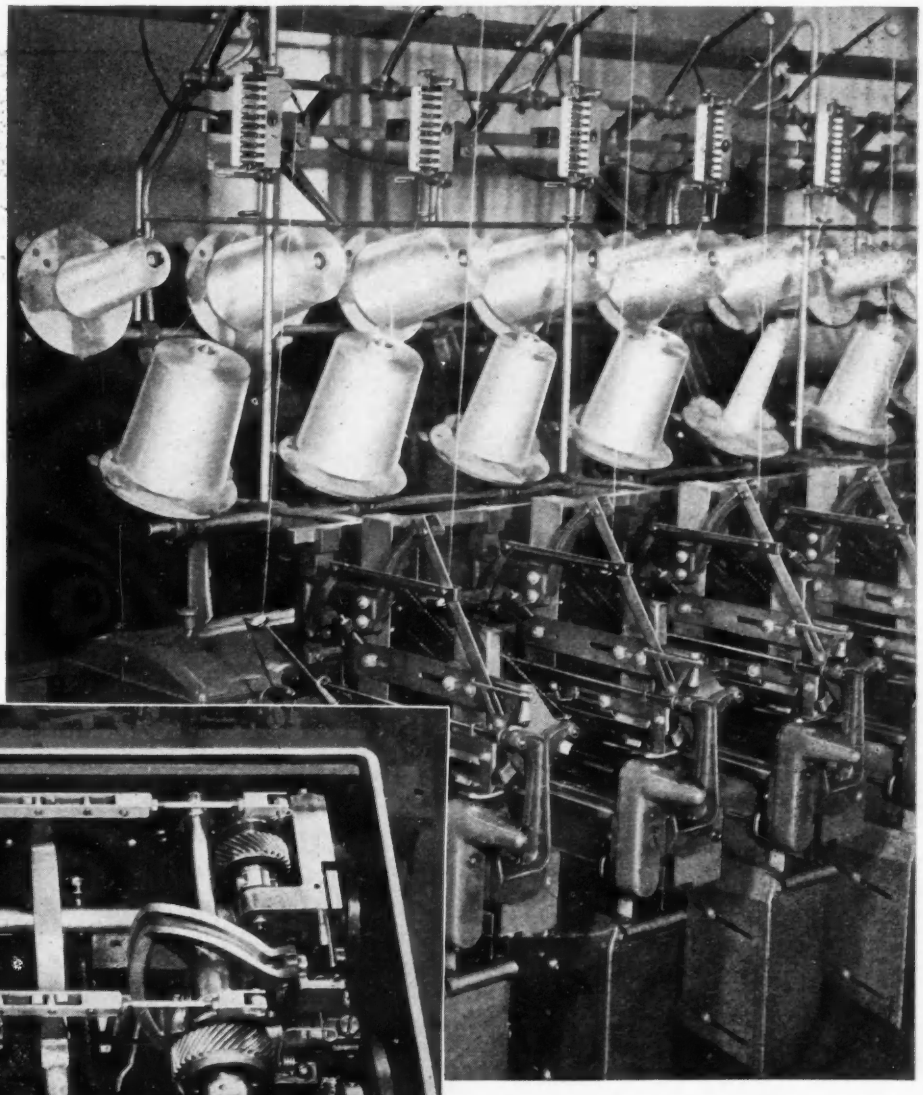
**Houghton Sta-Put Lubricants are treated for leak resistance and film strength. To make machines last longer, examine the Sta-Put record.**

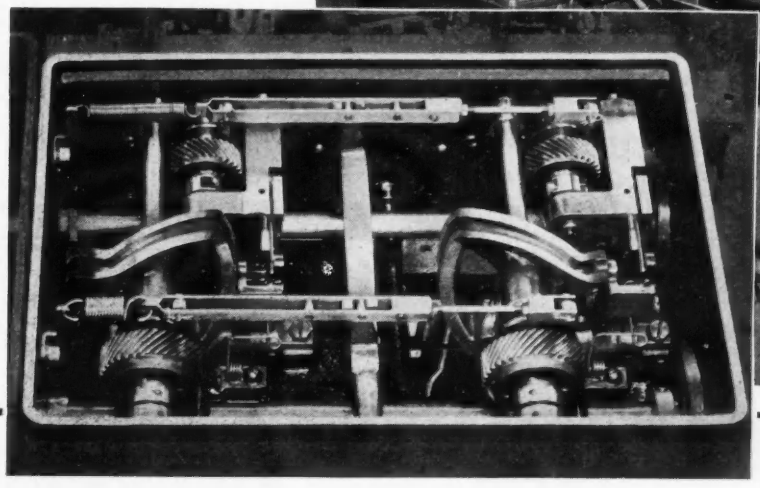
**E. F. HOUGHTON & CO.**

303 W. LEHIGH AVENUE, PHILADELPHIA

CHICAGO • DETROIT • SAN FRANCISCO • TORONTO

# BETTER YARN DELIVERY FROM No. 99 LOOM BOBBINS





High winding speed and automatic equipment for positioning empty bobbins and doffing full bobbins are the most striking features of the UNIVERSAL AUTOMATIC (No. 99 Bobbin Winder). But other developments which contribute to quality work are also interesting to mills making plans for the future.

Among these is a four-point cam which produces a "layer-lock" wind.

Each stroke of the Traverse Bar varies in length from the preceding traverse; each successive "knuckle" is laid a little bit forward or back of the previous "knuckle".

Thus each layer of yarn is "locked" by the one that follows it. This yarn formation results in an improved delivery in the shuttle by reducing the tendency of the yarn to "shell off" during the weaving process.

## UNIVERSAL AUTOMATIC

### HIGH SPEED BOBBIN WINDER

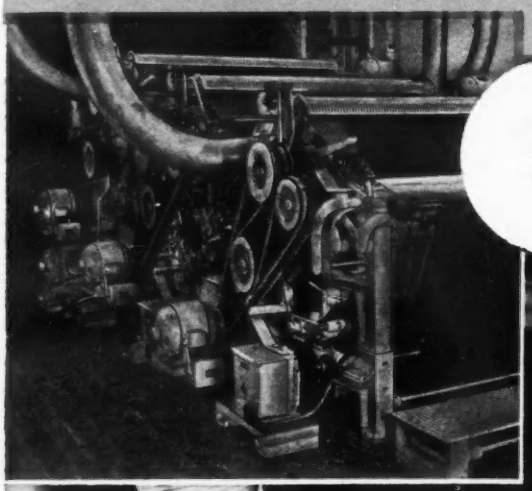
*See our Catalog in TEXTILE YEARBOOK*

# UNIVERSAL WINDING COMPANY

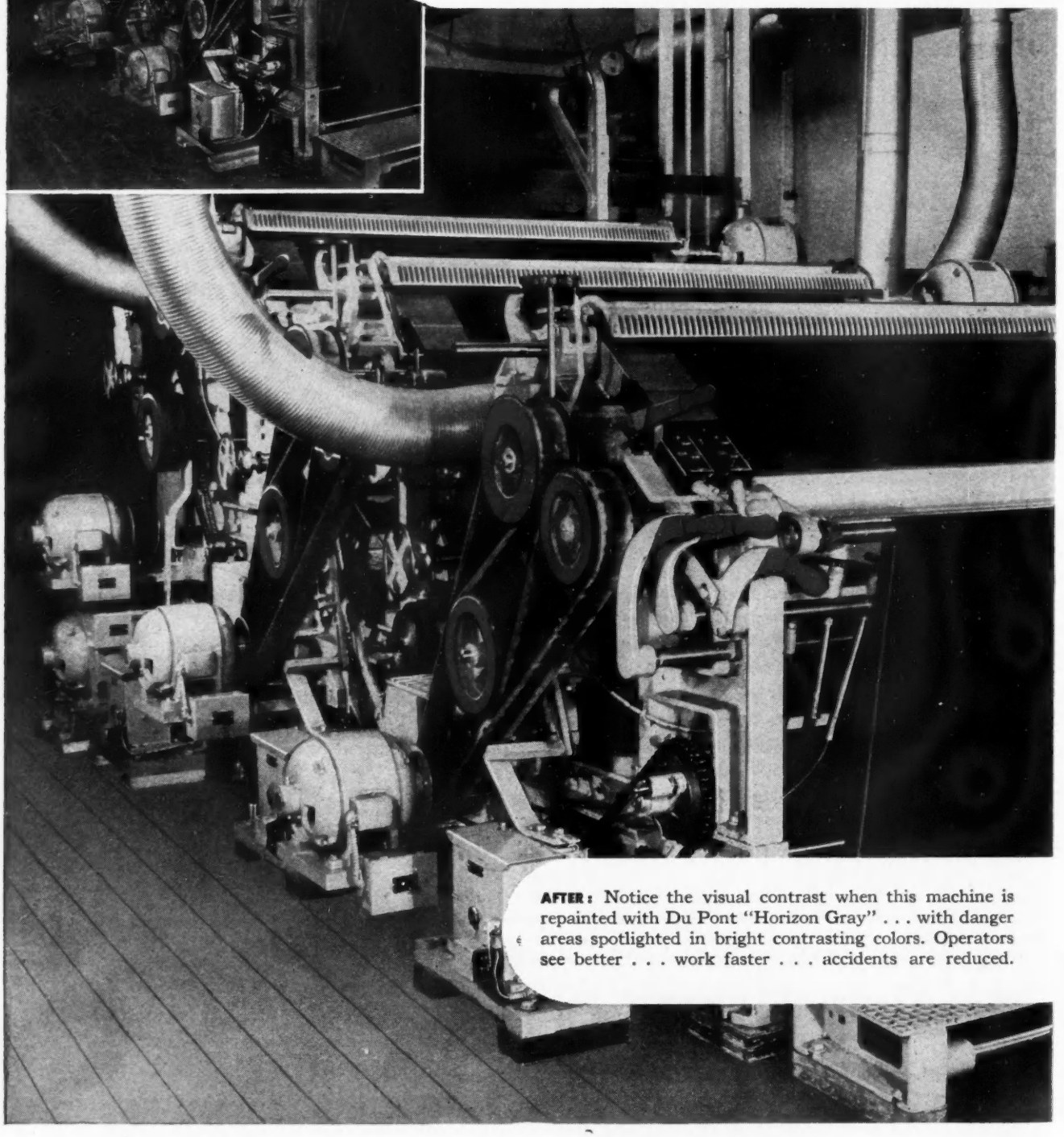
43-99-1

PROVIDENCE Boston Philadelphia Utica Charlotte Atlanta

# DU PONT "THREE



**BEFORE:** Most textile machinery is painted in dark, dingy colors that absorb light instead of reflect it. This unintentional camouflage slows down production . . . breeds eyestrain . . . causes mistakes and accidents.



**AFTER:** Notice the visual contrast when this machine is repainted with Du Pont "Horizon Gray" . . . with danger areas spotlighted in bright contrasting colors. Operators see better . . . work faster . . . accidents are reduced.

# DIMENSIONAL SEEING"

## *The NEW and proved way to boost production... with* PAINT!

**From all over the country** have come reports about Du Pont "Three Dimensional Seeing" . . . reports that show substantial increases in production and marked reductions in accidents.

**WHAT IS "THREE DIMENSIONAL SEEING"?** It's a new way of using *paint* to give textile workers keener, faster, more accurate vision.

**HOW?** Simply by repainting dark, dingy machines in scientifically selected colors that *reflect* light . . . colors that contrast with the yarns, threads and fabrics, and which also contrast with dangerous moving parts of the machine. Walls, ceilings and floors are painted in colors carefully selected to improve the efficiency of existing lighting equipment.

Colors and color combinations are scientifically selected by Du Pont paint technicians to fit the individual requirements of each plant. The type of machines, the color and types of fabrics, the plant lighting system . . . all are factors that help determine the paints to be used. For further information, fill in the coupon today.

DU PONT

## THREE DIMENSIONAL SEEING

### MAIL THIS COUPON TODAY

This coupon will bring you further information on the new production-speeding development, "Three Dimensional Seeing." Fill it in now . . . check the items that interest you . . . drop it in your "Outgoing" box. E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Dept. C53, Wilmington, Del.

☐


"The Visual Way to Victory through Three Dimensional Seeing," a 16-page booklet, explains this scientific system in detail, discusses test results, contains actual paint chips of colors.

☐

The new film, "Salvaging Waste Light for Victory," is available for showings to small or large groups. It explains how all interior surfaces can be painted for maximum lighting efficiency.

☐

A Du Pont Service Engineer will be glad to use the "Three Dimensional Seeing" Color Selector in your plant . . . make a recommendation of the scientifically correct color combinations for use in your mill.

Name_____

Title_____

Company_____

Address_____

City_____ State_____

# POUR

**TYCOL**

***SCIENTIFICALLY***

# POINT*

* This is #3 of a series of informative messages concerning the meaning and significance of commonly used tests and terms employed to describe the characteristics of lubricating oils.

T I D E W A T E R  L U B R I C A N I A

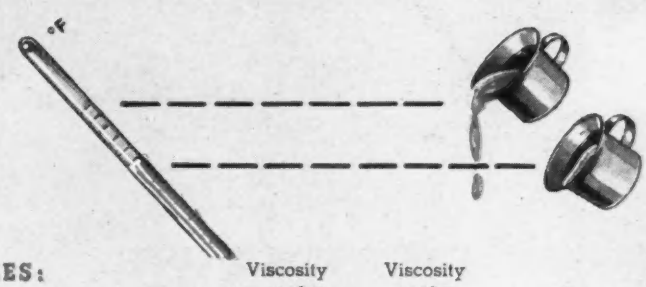
**DEFINITION:** The pour point is the lowest temperature at which the oil will pour or flow when chilled without disturbance under definite prescribed conditions.

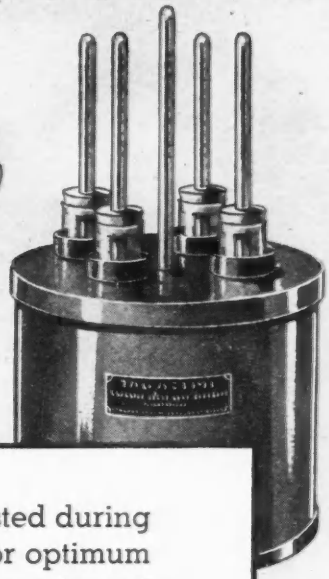
**TEST:** Following a carefully prescribed procedure with standardized equipment, the oil is chilled in a test jar or a corresponding 4 oz. sample bottle. At each oil temperature reading, taken at 5° F. intervals, the test jar is removed and tilted just enough to ascertain whether or not the oil is still fluid.

A temperature point will be reached at which the oil shows no movement when the test jar is held horizontally for exactly 5 seconds. The pour point is the temperature 5° F. above this "non-fluid" point.

**SIGNIFICANCE:** The pour point is an indication of the temperature below which it may not be possible to pour oil from its container, or below which it may not flow in gravity lubrication systems. This may be due either to partial separation of wax crystals forming a spongy network or to congealing of the oil itself.

Therefore the pour point bears no relation to the viscosity of the oil at higher temperatures. Neither does it indicate the pressure flow, or the tendency to "channel" at temperatures below the pour point.





| EXAMPLES: | Viscosity at 210° F. | Viscosity at 32° F. | Pour |
|---|---|---|---|
| Paraffine Base Lubricant.... | 70 | 12,000 | 25° F. |
| Napthenic Base Lubricant.. | 70 | 50,000 | 0° F. |

Tycol lubricants are rigidly controlled and tested during manufacture to the required characteristics for optimum performance. Among many other tests they must meet the pour point requirements of the individual application.

**DRUMS! DRUMS! DRUMS!**
War needs make it extremely important that all empty drums be returned immediately.

INDUSTRIAL TYCOL OILS-GREASES

## TIDE WATER ASSOCIATED OIL COMPANY

Eastern Division: 17 Battery Place, New York
*Principal Branch Offices:* Boston, Philadelphia, Pittsburgh, Charlotte, N. C.
MAKERS OF THE FAMOUS VEEDOL MOTOR OIL

OIL IS AMMUNITION
USE IT WISELY !

# INDUSTRIAL LUBRICANTS

***ENGINEERED FOR EVERY INDUSTRIAL USE***

# CLING-SURFACE *by the Carload for...* AMERICA'S WAR INDUSTRIES

**CLING-SURFACE DISTRIBUTORS ARE BUYING IN CARLOAD LOTS**

HERE'S photographic proof of the vital part Cling-Surface belt treatment is playing in war production. A whole carload for one distributor in a busy industrial center. Throughout industry and in our armed forces, Cling-Surface is helping all kinds of belts serve longer and deliver up to 40% more power. Cling-Surface preserves belt fibres, gives a non-slip grip that permits slack-belt operation. Protects bearings and shaftings against excessive wear. Cling-Surface meets U. S. Government specifications. Order from your mill supply distributor.

## CLING-SURFACE COMPANY

1036 Niagara Street
Buffalo, New York

SPEED-UP PRODUCTION ★ REDUCE WEAR

*with* CLING-SURFACE *Belt Treatment*

# The Franklin Process "SHUTTLE" SYSTEM

**THE ANSWER TO ANY PACKAGE DYEING PROBLEM . . .** While all of our four plants offer a general yarn dyeing service, each plant serves predominantly some particular branch of the textile industry, according to its geographical location.

Yet it makes no difference what type of fabric you make or which Franklin Process plant fills your order; you'll get yarn, dyeing and winding that is equally suitable for your purpose. That's because we "shuttle" information back and forth. Thus the experience of any one plant is multiplied by four.

We also "shuttle" orders when delivery requirements demand it, thus saving you unnecessary delay.

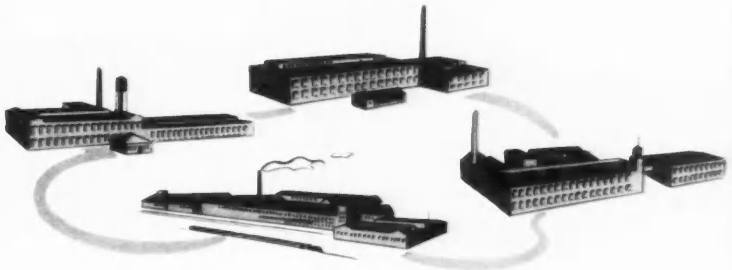
It's GOOD INSURANCE to use our Service.

Shirtings and dress goods. Serving this field is one of the specialties of our Providence plant.

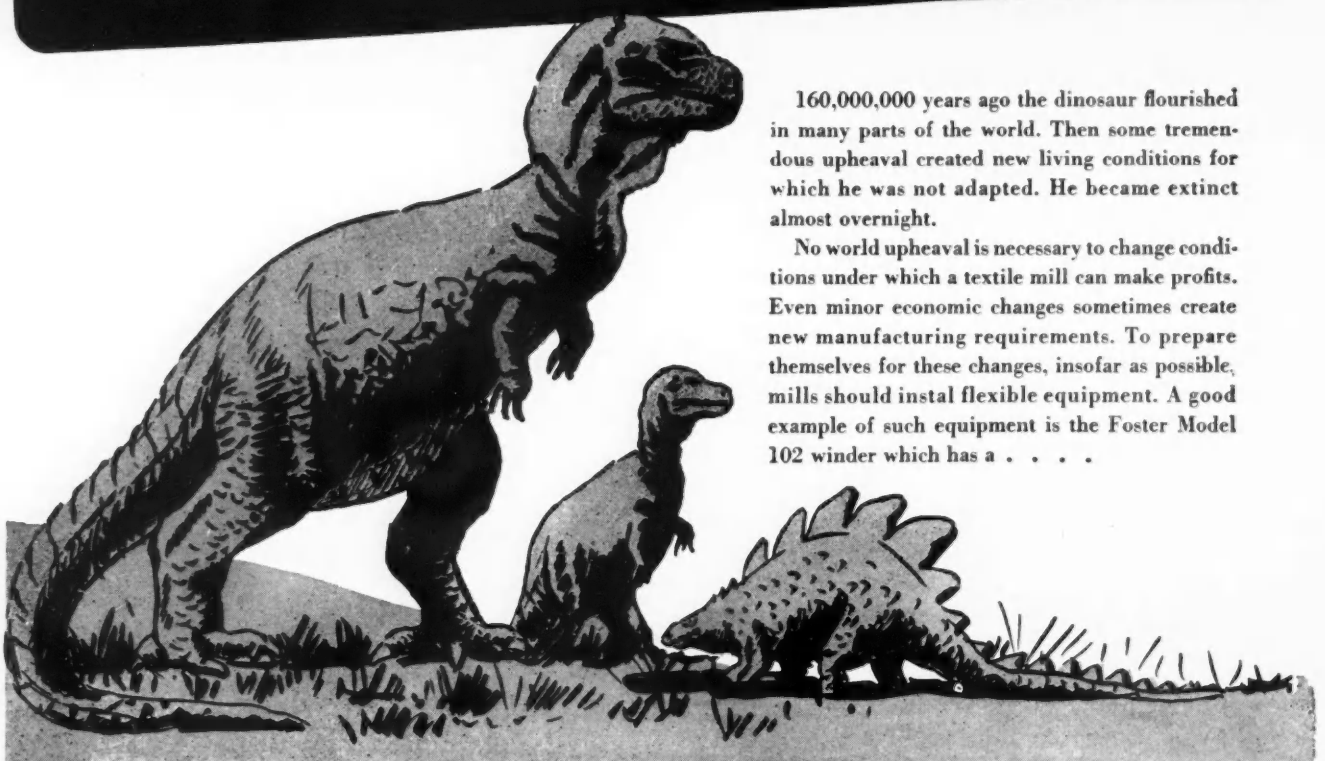
Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

YARN DYERS AND COLORED YARNS — PROVIDENCE, PHILADELPHIA, GREENVILLE, CHATTANOOGA. NEW YORK REP., 40 Worth St.; CHICAGO REP., 100 W. Monroe St.



# Help Your Business Avoid the Fate of the Dinosaur

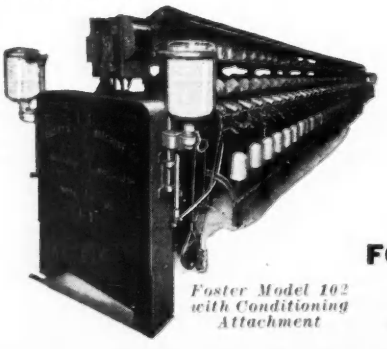


160,000,000 years ago the dinosaur flourished in many parts of the world. Then some tremendous upheaval created new living conditions for which he was not adapted. He became extinct almost overnight.

No world upheaval is necessary to change conditions under which a textile mill can make profits. Even minor economic changes sometimes create new manufacturing requirements. To prepare themselves for these changes, insofar as possible, mills should instal flexible equipment. A good example of such equipment is the Foster Model 102 winder which has a . . . .

## 7-WAY FLEXIBILITY

1. It will wind any kind and any count of staple yarn from fine combed cotton or rayon for tropical fabrics to heavy wool yarns for arctic cloths.
2. It will wind a straight base cone for warping or a convex base cone for knitting with a simple adjustment.
3. It will produce 9 different angles of wind from 9° to 18°. Important if you radically change your count or type of yarn.
4. It will wind package dyed yarn, even if damp. No jumping out of guides.
5. It will wind emulsion treated yarn. In fact, it is frequently equipped with an emulsion attachment.
6. Changeovers from cones to tubes, or vice versa, are comparatively inexpensive.
7. One side can wind cones and the other tubes, if desired.



*Foster Model 102 with Conditioning Attachment*

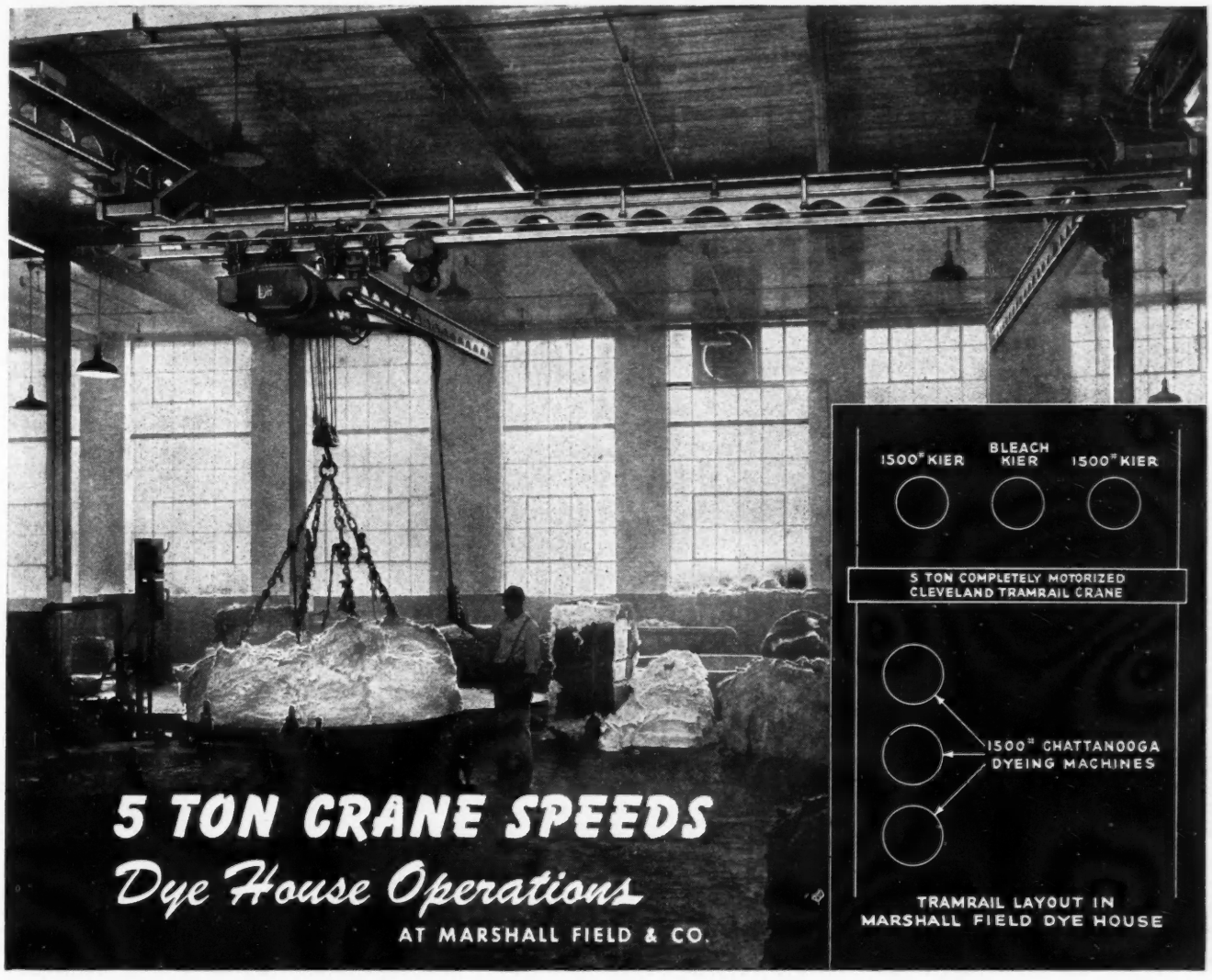
For today or tomorrow, Foster Model 102 Flexibility is an asset that you need. It also gives you TWICE THE PRODUCTION WITH ONE-THIRD LESS COST as compared with older Models.

**FOSTER MACHINE CO.,**
WESTFIELD, MASS.

Southern Office:
Johnston Bldg., Charlotte, N. C.

# FOSTER *Model* 102

For Winding Cotton · Wool · Worsted · Merino · Mercerized · Spun Silk & Spun Rayon Yarn


1500# KIER
BLEACH KIER
1500# KIER
5 TON COMPLETELY MOTORIZED CLEVELAND TRAMRAIL CRANE
1500# CHATTANOOGA DYEING MACHINES
TRAMRAIL LAYOUT IN MARSHALL FIELD DYE HOUSE

# 5 TON CRANE SPEEDS *Dye House Operations*

AT MARSHALL FIELD & CO.

Marshall Field & Co., Manufacturing Division, with main offices in Spray, N. C., have had considerable experience with Cleveland Tramrail overhead materials handling equipment in some of their large mills. They know how production can be stepped up and costs cut through its use.

When their newest dye house was erected in 1941 they did not hesitate to specify a Cleveland Tramrail crane. The crane is 5 tons capacity, has a span of 30 feet and is completely motorized.

Heavy kier covers are easily picked up or set in place with the crane. Weighty charges of bulky wet raw stock are taken from the dyeing machines to any point within the bay by the simple touch of the control buttons. All heavy hand lifting is eliminated.

Both machine time and man time is saved because the work can be handled much faster, and the dyeing machines need not be down near as long as customary for charging and discharging.

It is wise to study and formulate plans now on improvements which will aid you when new equipment can be purchased without priority difficulties. Our sales engineers will be glad to cooperate with you.

***GET THIS BOOK!***

BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy.

**CLEVELAND TRAMRAIL DIVISION**
THE CLEVELAND CRANE & ENGINEERING CO.
1175 EAST 283RD ST. WICKLIFFE, OHIO.

**CLEVELAND TRAMRAIL**

**OVERHEAD MATERIALS HANDLING EQUIPMENT**

*Note to Military Contractors*

# APPROVED COMPOUNDS FOR MILDEW-PROOFING

**MILDEW-PROOF TYPE 2 (Cuprammonium)***

**MILDEW-PROOF TYPE 3 (Copper Ammonium Fluoride)***

Two thoroughly dependable compounds for mildew-proofing; tested and proved by finishers of military fabrics. These products are approved for government work and widely used in treating U. S. service burlap and osnaburg.

MILDEW-PROOF TYPE 2 and TYPE 3 avoid solvent difficulties and are applicable to all vegetable fabrics (cotton, linen, jute, paper, sisal, hemp). Suited for mold, mildew and rot resistance under every climatic condition. Samples and further information upon request.

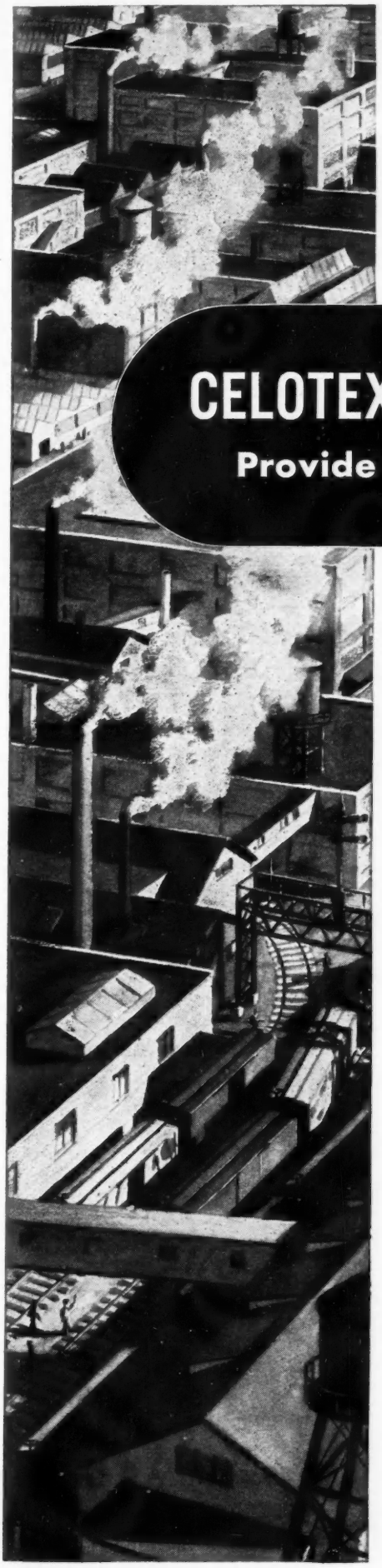
*These two products, designated as Types 2 and 3 in a recent release by U. S. Army, meet all government specifications.

WOLF BRAND PRODUCTS

**JACQUES WOLF & CO.**

*Chemicals* PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga.



**EXPERIENCED BUILDERS AGREE:**

# The only economical roof is a GOOD roof!

# CELOTEX BONDED BUILT-UP ROOFS

## Provide Years of Trouble-Free Protection!

ASK any old-timer with long experience in buying industrial roofs, and he'll tell you there is only one safe rule: "When you put on any roof, put on a *good* roof!"

Celotex Bonded Built-Up Roofs are well known to industry. They are available with 10, 15, or 20-year bond—your written guarantee of freedom from repair expense for a definite period of years. They have to be *good* roofs to meet Celotex world-famous standards of quality.

There's real economy in such long, trouble-free protection. That is why Celotex Bonded Built-Up Roofs have been chosen to guard vital war plants all over America. You may be sure that any contractor who is licensed to apply Celotex Built-Up Roofing Products really knows his business.

**"Belong together like pork and beans"**

Before you sign a contract, investigate the advantages of using Celotex Vapor-seal Roof Insulation in combination with a Celotex Bonded Built-Up Roof. *They belong together,* like pork and beans! They give you the benefit of centralized responsibility, because both are made by the same responsible manufacturer. Mail the coupon today.

**CELOTEX**

REG. U. S. PAT. OFF.

**ROOFING • INSULATING BOARD • ROCK WOOL**
**GYPSUM WALL BOARD • LATH • PLASTER**
**ACOUSTICAL PRODUCTS**

**THE CELOTEX CORPORATION • CHICAGO**

THE CELOTEX CORPORATION, CHICAGO Co 6-43

Please send complete information on Celotex Bonded Built-Up Roofs and Celotex Vapor-seal Roof Insulation.

*Name* .....

*Address* .....

*City* .....

*County* ..... *State* .....

# PICKER REPAIR PARTS WHEN YOU NEED THEM

WE keep on hand a very complete stock of all parts for Kitson pickers, and can usually ship the same day an order is received. We also can furnish beaters, ball bearings, screens and many other parts for other makes of pickers.

Under wartime conditions, it is of the utmost importance to keep machines running constantly and to be able to get prompt delivery on repair parts for keeping them running constantly.

In an emergency, a telegram or a telephone call will have the necessary repair parts at your plant the following day.

It is also a good idea to check your stock room and order picker parts on which the stock is low or is exhausted.

We can completely rebuild your pickers exactly like new, and when pickers are practically worn out and in need of more than ordinary repair parts, they can be completely renewed at far less than the cost of new machines with new frames.

**AldricH MachinE WorkS**

Greenwood, South Carolina

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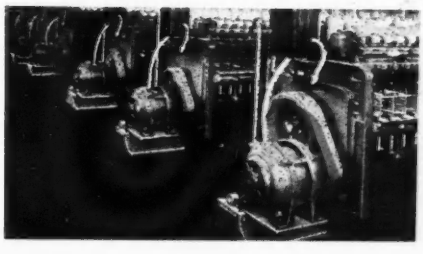
# Double Life Is Why Research Leather Belting Is Preferred Over Rubber V-Belts for Pivoted Base Drives

*Belt life is longer with Research Leather Belting due to:*

1. high frictional surface—less tension required to grip pulleys
2. greater pliability—less internal wear due to flexing

"Fifty Reports on Mechanical Power Transmission from Motor Drive to Industry" (Robert Drake) proves that a first-quality leather belt will last at least twice as long as a rubber V-belt on a corresponding pivoted base drive.

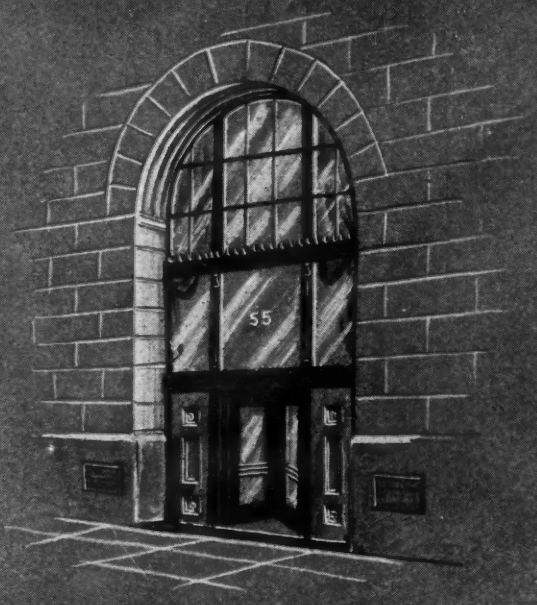


*Research Leather Belting on Pivoted Motor Drive ("Production Drive")*

And since Research is the leather industry's top belt (specified more than any other brand), it is your soundest buy for both performance and economy.

**GRATON & KNIGHT CO., Worcester, Mass.**

Only leather belting manufacturer with complete nation-wide service facilities. Branches in Chicago, Cleveland, Dallas, Detroit, Kansas City, Minneapolis, New York, Philadelphia, St. Louis, San Francisco. See adjoining column for distributors (also listed in THOMAS' REGISTER.)




# TEXTILE BANKING COMPANY

*Factoring Service*

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

# BEFORE THE TAKE-OFF *SINGER* IS ON THE JOB

Before one of the giant Curtiss "Commando" transports can take off, many things must be done. Men and women work day and night with many different tools and materials.

Singer sewing machines play a vital part in building planes, and clothing and equipping men for all branches of the armed forces.

Singer sewing machines formerly available for making hundreds of different things for civilian use are now sewing parachutes, uniforms, tents, gun covers, shoes, powder bags, fur lined helmets and many, many other articles needed to bring speedy victory to US. And if, like many others, you are having trouble getting Singer sewing machines, remember that Uncle Sam is our first customer, and his needs must be satisfied first.

**SINGER**

SEWING MACHINE COMPANY
Manufacturing Trade Department
149 Broadway, New York, N. Y.
*Branches in principal cities throughout the world*

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All rights reserved for all countries

*(Photo courtesy of Curtiss-Wright Corp.)*

# DEATH LEAVES A FINGERPRINT

Probably it was hot and humid in the assembly room... that day when warm, perspiring fingers accidentally touched a tiny, needle-pointed shaft. But the fingerprint remained... acid, corrosive...

A saboteur—this accidental fingerprint? Yes—for on a later day that tiny part, weakened by corrosion, may fail—in a submarine depth-gauge, an airplane altimeter, or in any of scores of delicate military instruments. And just because of a fingerprint, a man may die.

* * *

ANOTHER WAR JOB FOR AIR CONDITIONING. Where precision instruments are made, on which men's lives depend, air conditioning reduces perspiration . . . filters out dust . . . helps speed output.

And this is but one example of how General Electric *air conditioning* and *industrial refrigeration* may serve the war effort. To meet the exacting requirements of these wartime applications, General Electric is producing equipment that is highly efficient . . . flexible . . . compact.

When peace comes, this improved air conditioning equipment — by General Electric—will be available to all.

*General Electric Co., Air Conditioning and Commercial Refrigeration Dept., Division 436, Bloomfield, N. J.*

*Air Conditioning by*

**GENERAL ELECTRIC**

To the natural advantages of magnesium, Mazlo Magnesium products add their own superior qualities . . .

Magnesium is *super,* when it comes to machinability. It cuts at high speeds and feeds, taking a fine finish. Part costs are consequently lower, especially so where machine tools can be run at speeds which take full advantage of this property of magnesium.

In Mazlo Magnesium products supplied by American Magnesium Corporation, you can expect greater accuracy, uniformity and finer details. Credit this to skill in manufacturing gained in more than twenty years of working with magnesium. This may mean less allowance needed for finishing, less metal to remove, lower machining losses, when you put Mazlo Magnesium products through your plant.

In addition, remember in working with magnesium to translate the per-pound cost into what it costs per-piece. Magnesium weighs less than one-fourth as much as the heavy metals. You'll discover, therefore, that this lightweight metal permits new economies, if you've been in the habit of figuring costs on a weight basis.

Today, of course, you can't get Mazlo Magnesium products for civilian uses. But be planning to profit by its higher strength-weight ratio in making your postwar designs. Sales Agent: Aluminum Company of America, 1704 Gulf Building, Pittsburgh, Pa.

MAGNESIUM MAZLO PRODUCTS

REG. U.S. PAT. OFF.

# AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

TRADE MARK

# TUFFER

REG. U.S. PAT. OFF.

## CARD CLOTHING

## Here they come — Millions Strong

Each must be equipped with 250 pounds of shirts, sox, sheets, webbing, duck, and other items made of cotton, in addition to about 40 pounds of suiting, blankets, overcoating, and other products made of wool. All of this material must be processed by card clothing. *This is the initial step.*

Add to this the quantities of work clothes needed by war workers—on top of other civilian needs, and you see the "licking" your card clothing is taking.

Under these conditions you will appreciate the smooth performance of Tufferized Card Clothing. The Tufferizing Process is our exclusive patented process for making a more accurate and uniform product. Carders everywhere tell us it stays on the job longer, gives more uniform carding with less waste, and results in a nice smooth finish to coarse or fine yarns.

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles

# HOWARD BROS. MFG. CO.

**WORCESTER, MASSACHUSETTS**

**Southern Plants:** Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas. **Canadian Agents:** Colwool Accessories, Ltd., Toronto 9

# *Sabotage in the Camouflage Corps*

Microorganisms which cause damage to paint camouflaged surfaces are saboteurs of the first order. Regardless of the tenacity of these organisms, however, they can be satisfactorily controlled with Dowicide.

Exhaustive tests in numerous industrial fields have led to the development of 17 Dowicide products—all produced from chlorinated phenols. Textiles, paper and leather products — for example — also benefit from Dowicide applications. Because of their effectiveness in controlling the growth of microorganisms, Dowicides are performing invaluable service for industry. During these times when products are being shipped to the far corners of the earth and subjected to the most gruelling conditions, this extra protection is doubly desirable.

**THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN**

New York • St. Louis • Chicago • Houston • San Francisco • Los Angeles • Seattle

**PROTECTION FOR TEXTILES**—Dowicides protect textiles against mildew and fungus growths. Incorporated in compositions for finishing, it provides an effective inhibiting action under widely varying atmospheric conditions—from arctic to tropical. This means longer life for all textiles. Write for full details.

# DOWICIDE

**GERMICIDES AND FUNGICIDES**

DOW

**CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY**

# *"Gulf Lubrication is Production Insurance—"*

says this Superintendent

***"By following Gulf Engineering recommendations, we keep output up and delays down"***

"Working under heavy pressure 168 hours a week to meet urgent orders, we can't take chances on production jamming up because of time-consuming overhauls and repairs," says this Superintendent. "That is why we pay close attention to our lubrication—and use the quality lubricants prescribed by the Gulf Lubrication Service Engineer. They help us keep all our equipment up to maximum production week in and week out."

This mill, like many others, realizes definite production benefits from the use of Gulf quality oils and greases, applied as recommended by Gulf Lubrication Service Engineers. For these lubricants are scientifically manufactured to withstand even greater punishment than modern high-speed textile machinery in continuous operation can give them. They provide a tough, long-lasting film that is a constant safeguard against excessive wear and resulting mechanical troubles.

Let a Gulf Lubrication Service Engineer demonstrate to you—in your mill—how Gulf quality lubricants provide an extra margin of protection to your equipment —and help you secure uninterrupted production.

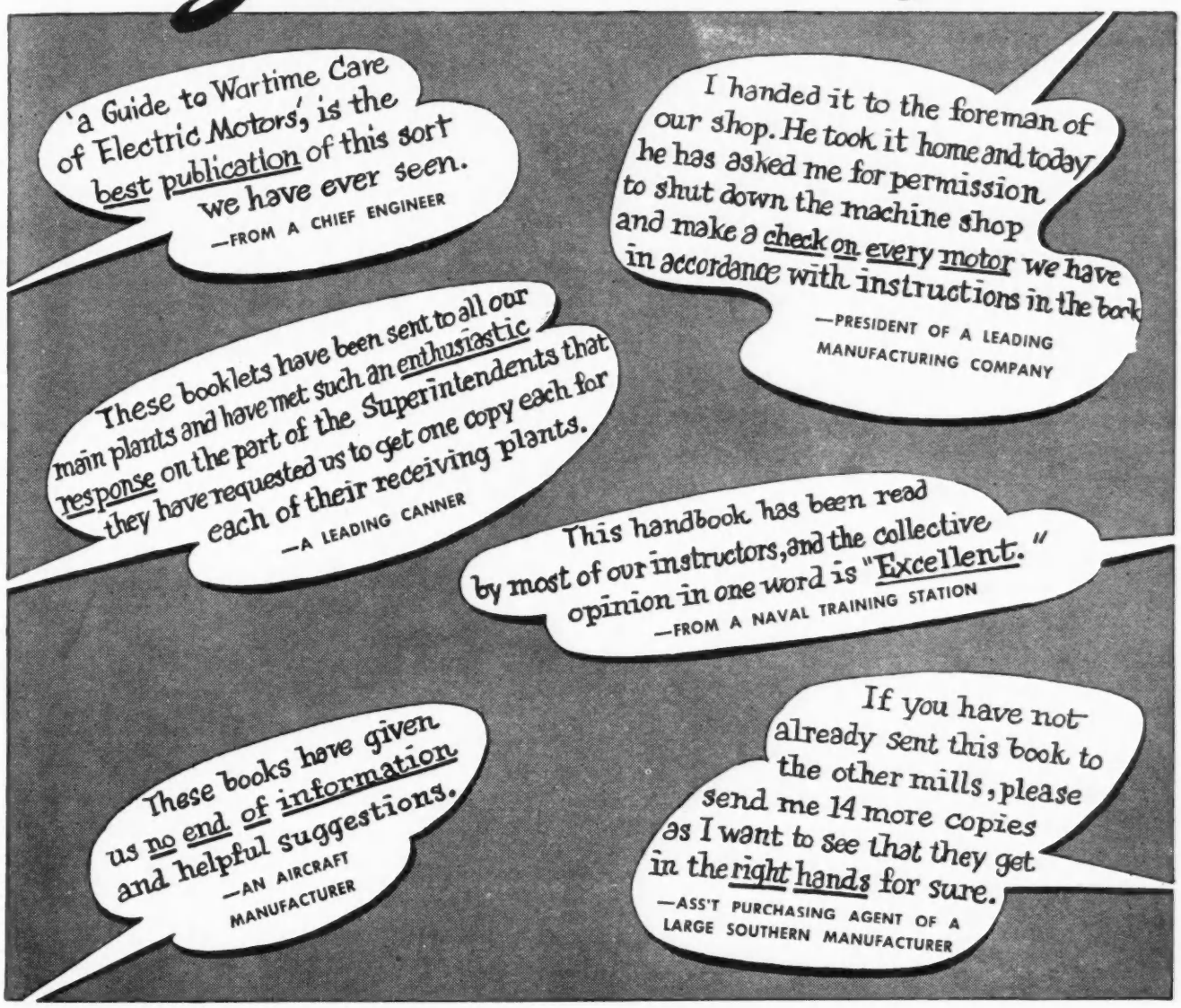
Gulf quality lubricants are available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

**Gulf Oil Corporation · Gulf Refining Company**

**Gulf Building, Pittsburgh, Pa.**

GULF INDUSTRIAL LUBRICATION

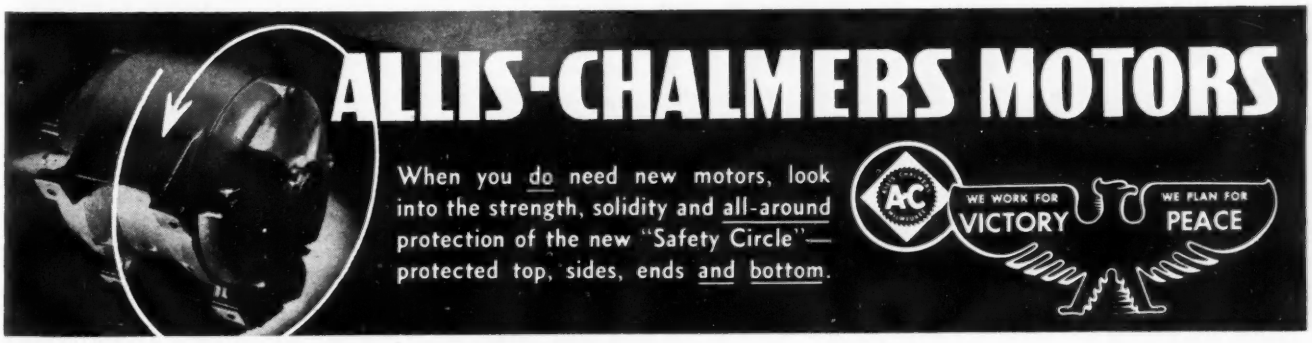
# Success Story!


'a Guide to Wartime Care of Electric Motors', is the best publication of this sort we have ever seen.
—FROM A CHIEF ENGINEER
I handed it to the foreman of our shop. He took it home and today he has asked me for permission to shut down the machine shop and make a check on every motor we have in accordance with instructions in the book
—PRESIDENT OF A LEADING MANUFACTURING COMPANY
These booklets have been sent to all our main plants and have met such an enthusiastic response on the part of the Superintendents that they have requested us to get one copy each for each of their receiving plants.
—A LEADING CANNER
This handbook has been read by most of our instructors, and the collective opinion in one word is "Excellent."
—FROM A NAVAL TRAINING STATION
These books have given us no end of information and helpful suggestions.
—AN AIRCRAFT MANUFACTURER
If you have not already sent this book to the other mills, please send me 14 more copies as I want to see that they get in the right hands for sure.
—ASS'T PURCHASING AGENT OF A LARGE SOUTHERN MANUFACTURER

NINE MONTHS AGO Allis-Chalmers offered free to U. S. industry a *new* kind of maintenance book . . . "A Guide to Wartime Care of Electric Motors."

Setting up as targets for maintenance the 9 main enemies of motor life — dust, stray oil, moisture, friction, misalignment, vibration, uneven wear, overload, underload — this new handbook gave simple, easy-to-get, *wartime* directions for fighting them.

Result? Over *100,000* copies are already in use by the armed forces and war industry — and new requests pour in daily. If you haven't yet obtained *your* free copy, write ALLIS-CHALMERS, MILWAUKEE, WIS. A 1592


ALLIS-CHALMERS MOTORS
When you do need new motors, look into the strength, solidity and all-around protection of the new "Safety Circle"— protected top, sides, ends and bottom.
A-C
WE WORK FOR VICTORY
WE PLAN FOR PEACE

# You lick both Mildew and Wet Weather with FEN

## Non-toxic one-bath treatment for water-repellency and anti-mildew

Take two palm trees . . . add a sturdy canvas hammock treated with Fen-Aseptic for water repellency and anti-mildew . . .

Result: Comfort and safety for our soldiers in the tropics.

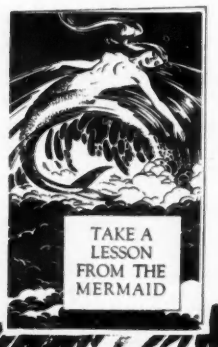
If you are working on fabrics for jungle warfare, investigate the advantages of Fen-Aseptic. It's a non-toxic one-bath treatment for water repellency and anti-mildew.

Non-toxicity means positive protection—for your men who apply the finish, for the soldiers who use the fabrics.

The one-bath treatment saves time in handling. Cuts cost of labor and chemicals. Easily applied on quetsch, padder, jig, beck, starch mangle or continuous process machine, followed by drying at an elevated temperature.

Fen-Aseptic meets government specifications for mildew-proofing and water repellency. Now being used on a wide variety of military fabrics. See list below.

Fen is available three ways—Fen Water Repellent, Fen Anti-Mildew and Fen-Aseptic, a combination of both. Write us.




When fabrics call for water repellency alone, depend on Fen Water Repellent. Proof of superior results is given in folder, "Take a Lesson from the Mermaid." Write for a copy.

FEN-ASEPTIC is a non-toxic one-bath treatment combining water repellency and mildew-proofing Now being used for fabrics such as:
Jungle hammocks
Ducks and twills for shelter tents
Barracks bags
Uniform twill
Cotton cloth
Cotton sleeping bags
Duck netting
Mosquito bars
FEN WATER REPELLENT is being used on fabrics such as uniform twill, herringbone twill, cotton duck for case covers, canvas for leggings
FEN ANTI-MILDEW is being used on fabrics such as camouflage cloth, sandbagging, cordage and thread, burlap and osnaburg.
FEN

Amalgamated Chemical Corp., Philadelphia, Pa. Southern Representative: Robt. A. Bruce, P. O. Box 35, Greensboro, N. C. : : Makers of a complete line of Textile Finishes, Dyeing Agents, Penetrants and Softeners.

*Why Armstrong's Cork Cots*

# spin quality yarn at low cost

IT is no matter of chance that Armstrong's Cork Cots serve more spindles than *any* other roll covering. For, no other material—natural or synthetic—possesses all of cork's advantages. And no other company has had so much experience with cork roll coverings as Armstrong.

Armstrong's Cork Cots have a superior "grip," which assures uniform drafting and produces *strong yarn*. These cots prevent "eyebrowing"; hence there are *fewer slugs* in the yarn. They minimize end breakage, top roll lapping, clearer waste, and damage from hard ends. The seamless construction of Armstrong's Cork Cots, the absence of lateral flow, and resistance to "hollowing out" produce *even* yarn. The uniformity of these coverings assures *uniform production*.

The first cost of Armstrong's Cork Cots is low, and they have a long service life. Moreover, each cot can be rebuffed 2 to 4 times—for as little as ½¢ per rebuffing—affording a total of 3 to 5 lives! That's why Armstrong's Cork Cots have proved the *most economical* roll covering.

**And remember—more cork is available now than ever before. You can get Armstrong's Cork Cots without any priority rating.**

**Send for New, Free Booklet**

For real help in solving your roll covering problems . . . for complete facts about the cork cots, synthetic rubber cots, and long draft aprons Armstrong makes . . . send *today* for your free copy of "Modern Textile Roll Coverings." Write to Armstrong Cork Company, Textile Products Section, 3606 Arch Street, Lancaster, Pa.

**ARMSTRONG'S CORK COTS**

ACCOTEX COTS · ACCOTEX APRONS

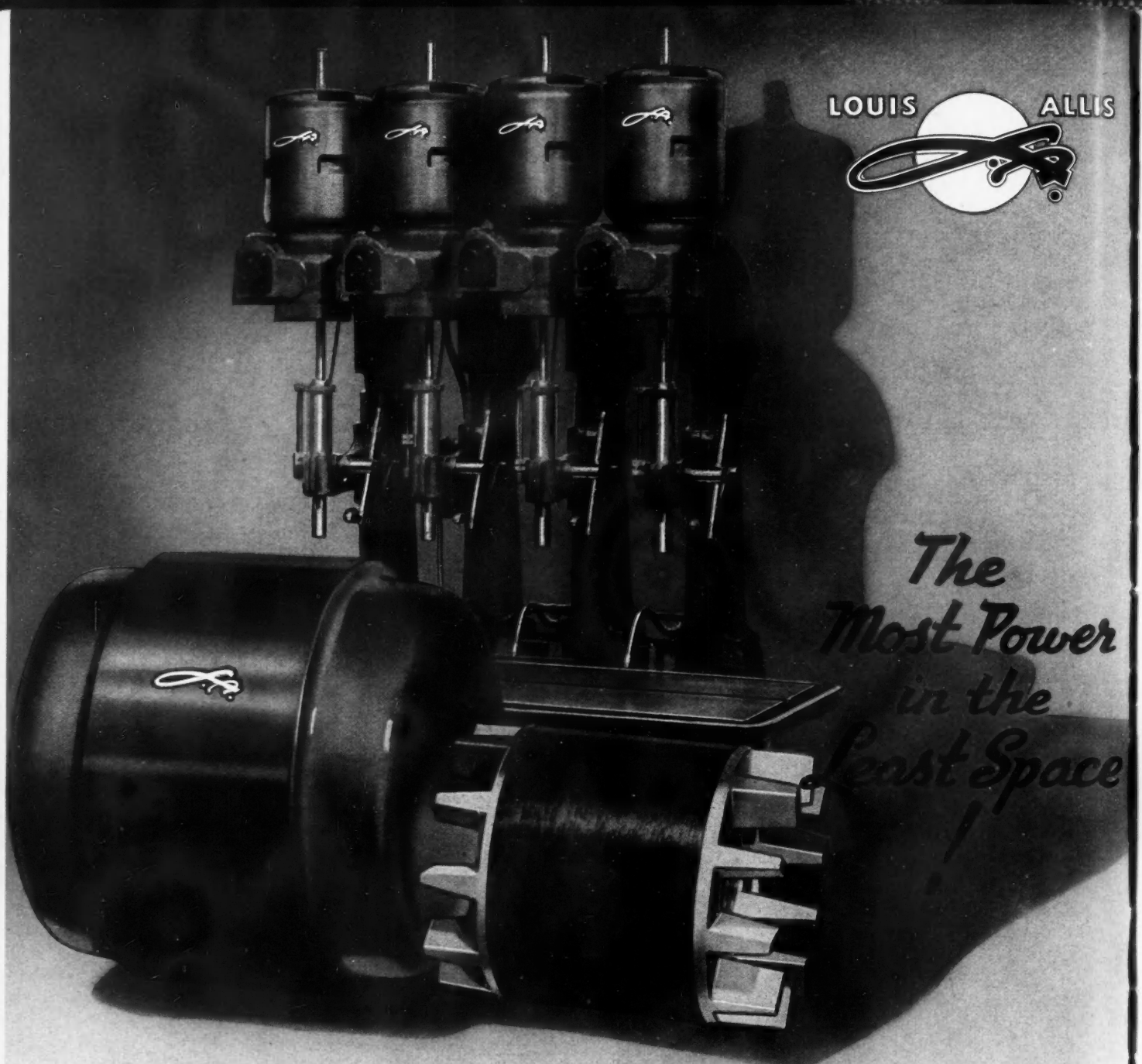
# New Garments for Old

Seven years ago Jean was 17, just out of secretarial school. A month ago she was financial secretary for a well known industrialist and smarter than many accountants. She was good and knew it and so did her boss. But when her husband Bill joined the Navy she fretted and fretted and then joined the WAVES. One day she and Ensign Beal came in to see her former boss, mainly to show off her new outfit. The old man motioned them to sit down and grunted, "Now the Navy's got brains in addition to brawn. They can't miss." He jerked the phone to his ear and growled, "Get me Rue at the bank." .... "Rue, send us two $500 War Bonds," he said. "I know .... These are additional for a special purpose .... my secretary's gone off to war .... helluva note .... going without and paying for it too .... helluva note," .... and he hung up with a wry smile. If you had looked closely you could have seen a Legion button on the old man's lapel.

**J.W. Valentine Co.**
INC.

40 Worth Street TEXTILES New York City

For their sake
THE LOUIS ALLIS CO., MILWAUKEE, WIS.




The trend of modern machinery design is towards greater use of built-in rolled shell shaftless type electric motors.

*Direct motor drive of different operating parts of a machine permits the application of motors with exactly the proper electrical characteristics for each drive. This eliminates costly and complicated mechanical transmission of power from one part of the machine to another.*

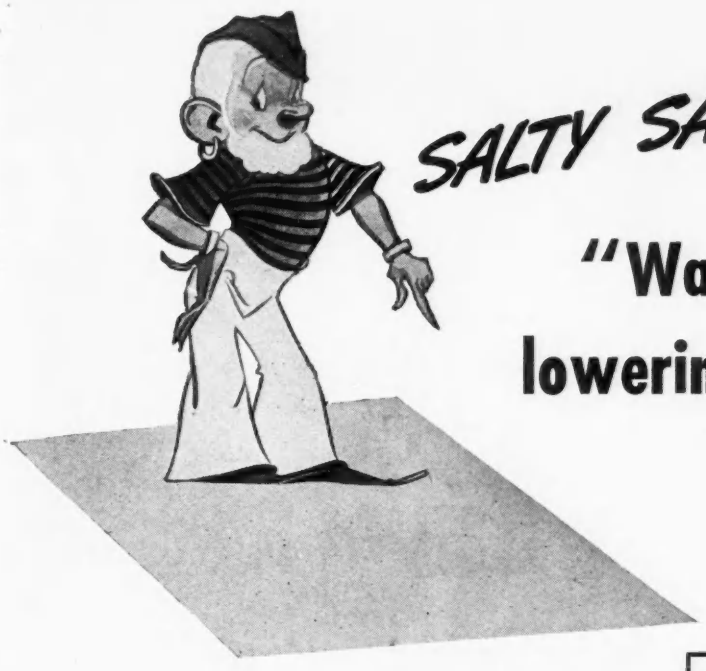
A wide range of electrical characteristics and dimensions for each horsepower rating—permits a greater flexibility in designing machinery.

*For over 40 years we have been working hand in hand with machinery designers—helping to make good machinery better—by the proper application of the proper motors.*

We earnestly solicit your inquiry on your very next electric motor requirement—and assure you that your needs will receive our most prompt and careful attention in every way.

*A copy of our Bulletin No. 516C, describing shaftless motors and their application will be cheerfully sent upon your request.*

**THE LOUIS ALLIS CO., MILWAUKEE, WIS.**



# SALTY SAYS:

## "Want level dyeing while lowering production costs?"

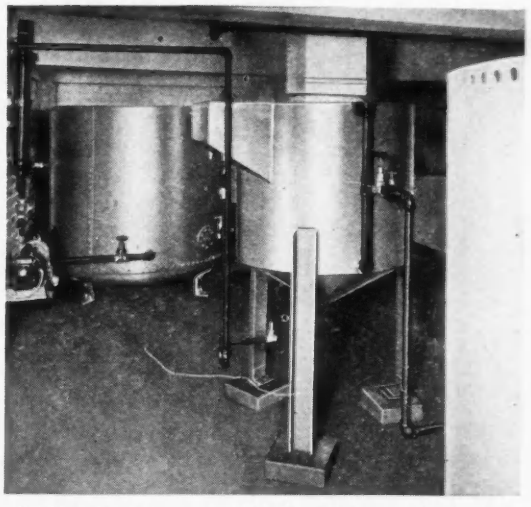
"If you use a *100%* saturated brine for exhausting the dyes in place of *dry* salt . . . you can eliminate spotting, streaking and white edges!

"You see, brine disperses evenly throughout the vat . . . there's no chance of undissolved crystals ruining the dye lot when you use a *100%* saturated brine.

"And when you install a Lixator . . . you get 100% saturated brine every time! It's produced *automatically*. Furthermore, the Lixator cuts your production costs directly. First of all, it uses 10% to 20% *less* salt. Second, it utilizes inexpensive Sterling Rock Salt.

"But not only will the Lixator help you do a better job of dyeing. Lixate brine steps up the efficiency of zeolite water softener regeneration also.

"Can you think of a more valuable addition to your mill? And the beauty of it is—you don't need a heavy capital outlay in order to install a Lixator. International leases the machine to you for a very nominal annual sum. Get the facts, *today!*"



*"This is the Lixator installed by Millbury Woolen Co. at their plant in Millbury, Mass."*

"IT'S FREE!"

"Let me send you this 36-page fully-illustrated booklet on the Lixate Process for making brine. It gives you all the facts—installations, brine tables, diagrams, formulas. Just write for *your* copy!"

*The* LIXATE *Process*
Reg. U. S. Pat. Off.
*for making brine*

**INTERNATIONAL SALT COMPANY, INC., DEPT. C-6, SCRANTON, PENNSYLVANIA**

# KEEP 'EM RUNNING WITH GENUINE H&B REPAIR PARTS

THE MAINTENANCE and repair of existing equipment in every industry has suddenly become one of the most vital factors in the war production program. This is particularly true of textiles as the requirements of our armed forces call for hundreds of millions of yards of fabric suitable for military purposes.

To meet this call for all-out production it is essential that every machine which is suitable for producing goods required by the military, naval and air forces should be kept in perfect running order. Efficient operation can only be expected when repair parts are used that are accurately machined with special tools to give years of service at the highest productive output.

To the users of our machinery we say—"Keep 'em running with genuine H & B repair parts". This service we believe to be of paramount importance and propose to maintain same to the utmost of our resources.

While a limited amount of new textile machinery will be available to mills operating wholly or nearly so on government contracts through the issuance of priority certificates, deliveries will depend to a great extent upon our being able to promptly obtain iron, steel and other materials necessary for its fabrication.

In addition to our regular products we have been engaged for the past year in the manufacture of munitions and every effort is being made to expand our operations to meet the needs of the hour.

**H & B AMERICAN MACHINE CO.**

*Textile Mill Machinery*

**PLANT AT PAWTUCKET, R. I.**

**Boston Office, 161 Devonshire St.**
**Charlotte Office, 1201-3 Johnston Bldg.**
**Atlanta Office, 815 Citizens & Southern National Bank Bldg.**
**Export Dept., United States Machinery Co., 115 Broad St., New York, U. S. A.**

# FULLING is faster with YARMOR 302-W

REPORTS show that fulling is as much as 30% faster with Yarmor* 302-W Pine Oil in the soap-soda ash stock solution.

In heaviest overcoating or lightest goods, all fibers are thoroughly wetted and penetrated. Cleansing is better, because Yarmor completely emulsifies grease and dirt. Rinsing is cleaner, because insoluble precipitates are held in suspension and prevented from redepositing on the cloth. And Yarmor's lubricating action means less floc on the fulling mill floor—more weight in the cloth.

To cut down your fulling costs, and produce better-looking fabrics — use Yarmor 302-W. Stocks are available.

*Reg. U. S. Pat. Off.

**MORE "FOOLPROOF" FORMULAS OBTAINABLE**

Hercules developed Yarmor 302-W especially for the woolen industry—to provide a wider range of stable soap-soda ash stock solutions than ordinarily available. Thus, in addition to its excellent wetting, emulsifying, and detergent-assistant action, Yarmor 302-W is also easier to work with. It will help you get those woolens through in record time.

NAVAL STORES DEPARTMENT

HERCULES POWDER COMPANY

INCORPORATED

903 Market Street, Wilmington, Delaware

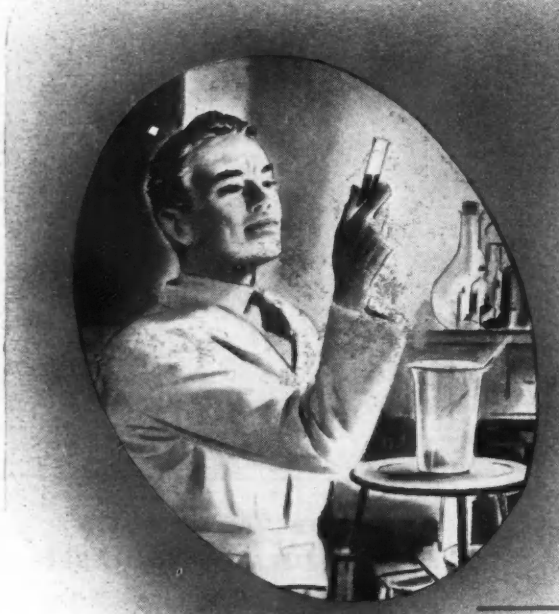
00-78

# THE TUBIZE TESTING *and its Supporting*

**Early in 1934, Tubize set forth a new philosophy of responsibility, and a new program of Testing, Labeling and Advertising... a new sales and advertising service. It was a simple, practical answer to the growing consumer demand for the facts about wearing apparel fabrics made of Rayon Yarn... what they were made of; how they would wear; how to care for them.**

**Refined by experience; of new and greater usefulness in a war economy... the basic simplicity of the Tubize program has not changed. We will accept for testing any fabric made of Tubize Rayon... will identify with the Tubize Certified Quality Label fabrics that are proved satisfactory as to cleanability, color and wear... and will include on the label definite directions as to how best to clean and care for the labeled dress or lingerie.**

**Here is a sales and service program that works... that has proved its value through a decade of successful merchandising.**



## TESTING

FABRICS MADE of Tubize Rayon are tested by the United States Testing Company so that you and your customers can know just what to expect of them.

These tests establish the facts women want to know about the fabrics they buy... what wear to expect ... how they wash or dry clean... how the colors stand up... special hints for care. In other words, we substitute for guesswork the scientific findings of the laboratory—a service that you can use to great advantage.

## LABELING

THE TUBIZE Certified Quality Label puts the whole weight of Tubize Testing and Advertising to work for you... it is a certification of the serviceability of every garment that carries it; a reliable guide to the proper care of that garment.

Now, as war conditions are putting added strains on shortened sales forces, the value of the Tubize Label is greater than ever... it is an automatic assurance of value... a powerful silent sales help.

# *and* LABELING SERVICE ...

# *Advertising*

## ADVERTISING

THE TUBIZE Policy of Testing and Labeling has been given voice, life and usefulness by years of consistent national advertising to consumer, manufacturer and merchant.

Tubize advertising is constantly building up an appreciation of Rayon... establishing a reliable guide to serviceable Rayon apparel... creating a ready acceptance of merchandise identified with the Tubize Certified Quality Label.

When you use the Tubize Certified Quality Label, the accumulated value of years of Tubize advertising works for your merchandise...it costs you nothing extra...it is a service that is yours for the asking.

*Current Tubize advertisements tell of Rayon's great importance in direct war uses... give the women of America definite, helpful hints to make their dresses and lingerie last longer.*

**TUBIZE CHATILLON** *Corporation*

VISCOSE AND ACETATE RAYON YARNS AND FABRICS • 2 PARK AVENUE • NEW YORK CITY

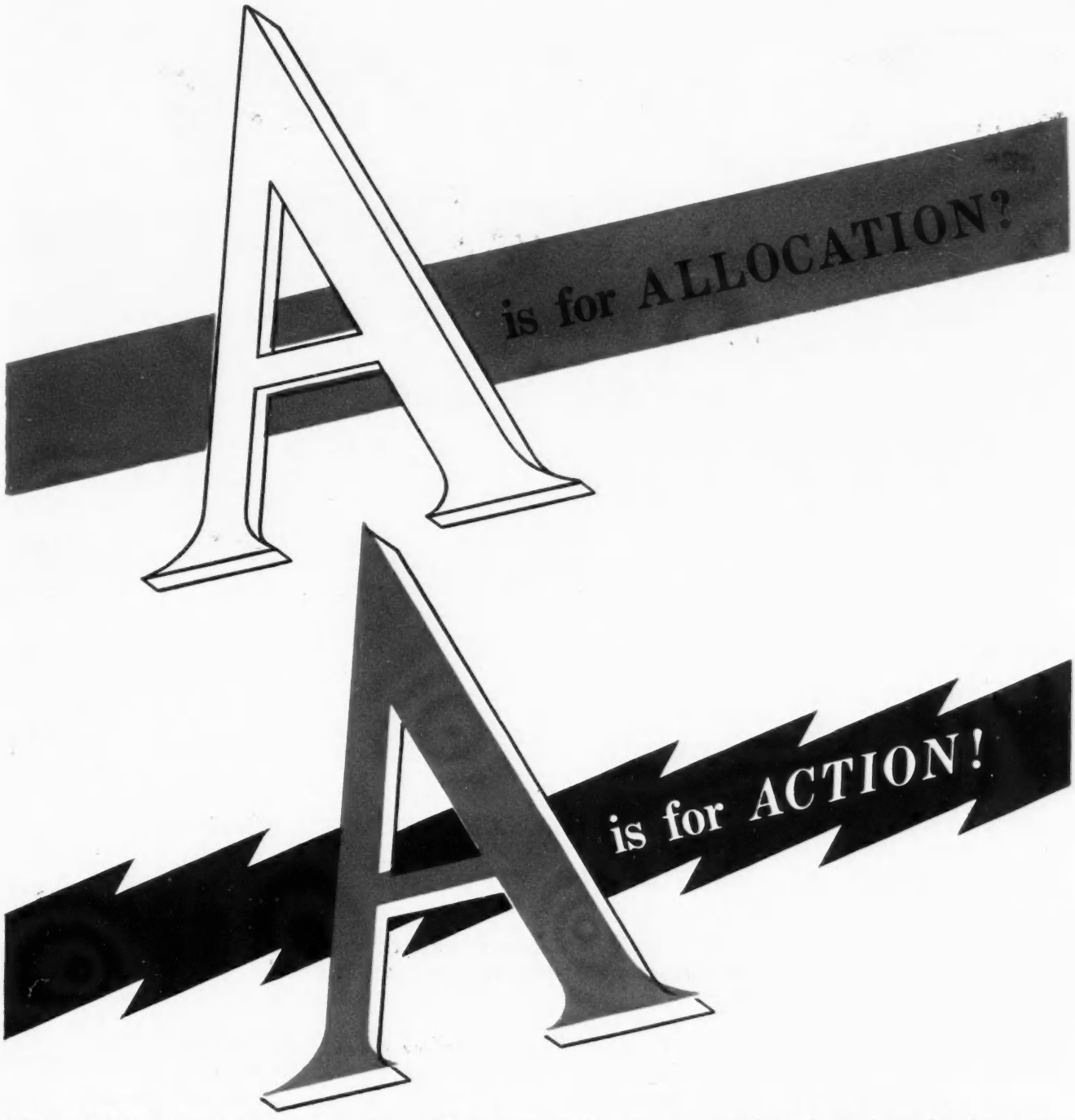
ELECTRONIC Instruments in the industrial plants of tomorrow will supply that life-blood of change and improvement which makes for scientific progress and commercial success.

To anticipate the exacting demand of industry's future instrumentation, Brown and Minneapolis-Honeywell engineers have assumed the obligation of leadership in pioneering new Electronic developments for the measurement and control of industrial processes.

The Brown Instrument Company, 4492 Wayne Avenue, Philadelphia, Pennsylvania, Division of Minneapolis-Honeywell Regulator Co., Minneapolis, Minnesota, and 119 Peter Street, Toronto, Canada. Wadsworth Road, Perivale, Middlesex, England, and Nybrokajen 7, Stockholm, Sweden.

*Instruments by* **BROWN** *and Controls by*

**MINNEAPOLIS-HONEYWELL**




"Essential to the war effort" must continue to guard the reserves and allocate the flow of many chemical supplies.

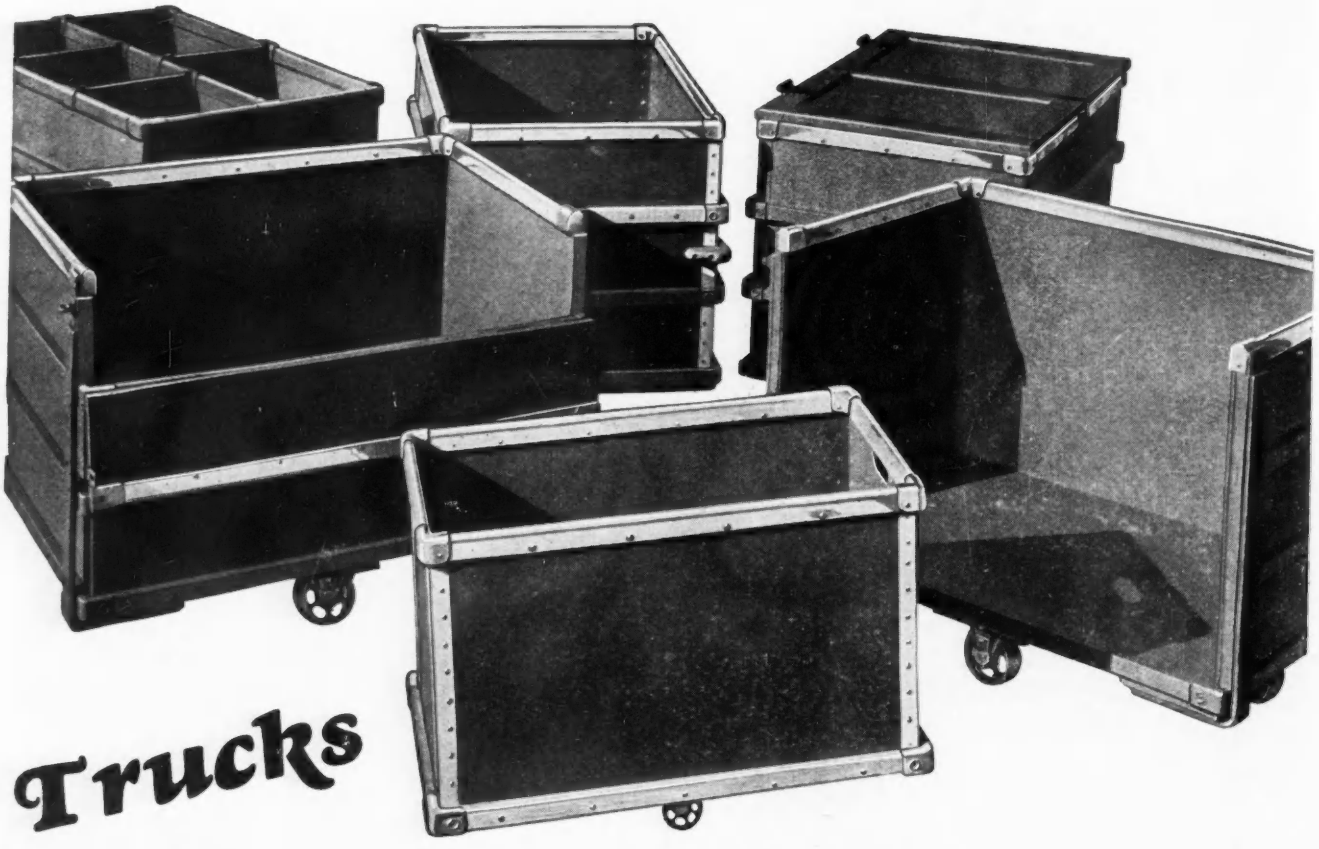
Helping to fill the "gaps" in chemical supply for both the war and home fronts is Cyanamid's big wartime undertaking. It is a job that calls for action . . . expanding our plants and equipment . . . speeding our production methods . . . and accelerating our research and product development.

If you are confronted with a problem arising out of difficulty in obtaining chemicals and textile specialties for your high priority business, or because of the non-priority nature of your manufacture, call upon Cyanamid. We will be glad to apply our facilities to help in the solution of your problem. There is no obligation.

---

**AMERICAN CYANAMID**
**AND CHEMICAL CORPORATION**
*A Unit of American Cyanamid Company*
30 ROCKEFELLER PLAZA, NEW YORK, N. Y.

MANUFACTURERS OF
SULPHONATED OILS • PENETRANTS • FINISHES • SOFTENERS
SIZING COMPOUNDS • DECERESOL® WETTING AGENTS
AND OTHER SPECIALTIES FOR THE TEXTILE INDUSTRY
*®Reg. U. S. Pat. Off.*



# Trucks

## DESIGNED TO MEET YOUR SPECIFIC PROBLEMS

### Usually at no extra cost over standard trucks of the same over-all dimensions.

DIAMOND Fibre Trucks help you use your man-power more effectively, assure maximum production schedules with minimum losses.

Diamond Vulcanized Fibre Hollow Ware is sturdily built. Light in weight (only half as heavy as aluminum) . . . with a smooth, hard surface, readily cleaned and easily kept clean . . . rust, splinter and mildew proof . . . armored with metal at wear-points, and all metal parts rust-resistant plated.

Write today for your copy of Catalog HW-9. It describes the complete C-D line of Diamond Vulcanized Fibre Hollow Ware . . . Baskets . . . Boxes . . . Trucks . . . Cans . . . Barrels. Submit your "material and parts handling" problems to Material Handling Equipment Headquarters—No. 9 Chapel Street, Newark, Delaware.

DIAMOND Vulcanized FIBRE Hollow Ware

*Boxes • Barrels • Trucks • Cans • Baskets • Trays*

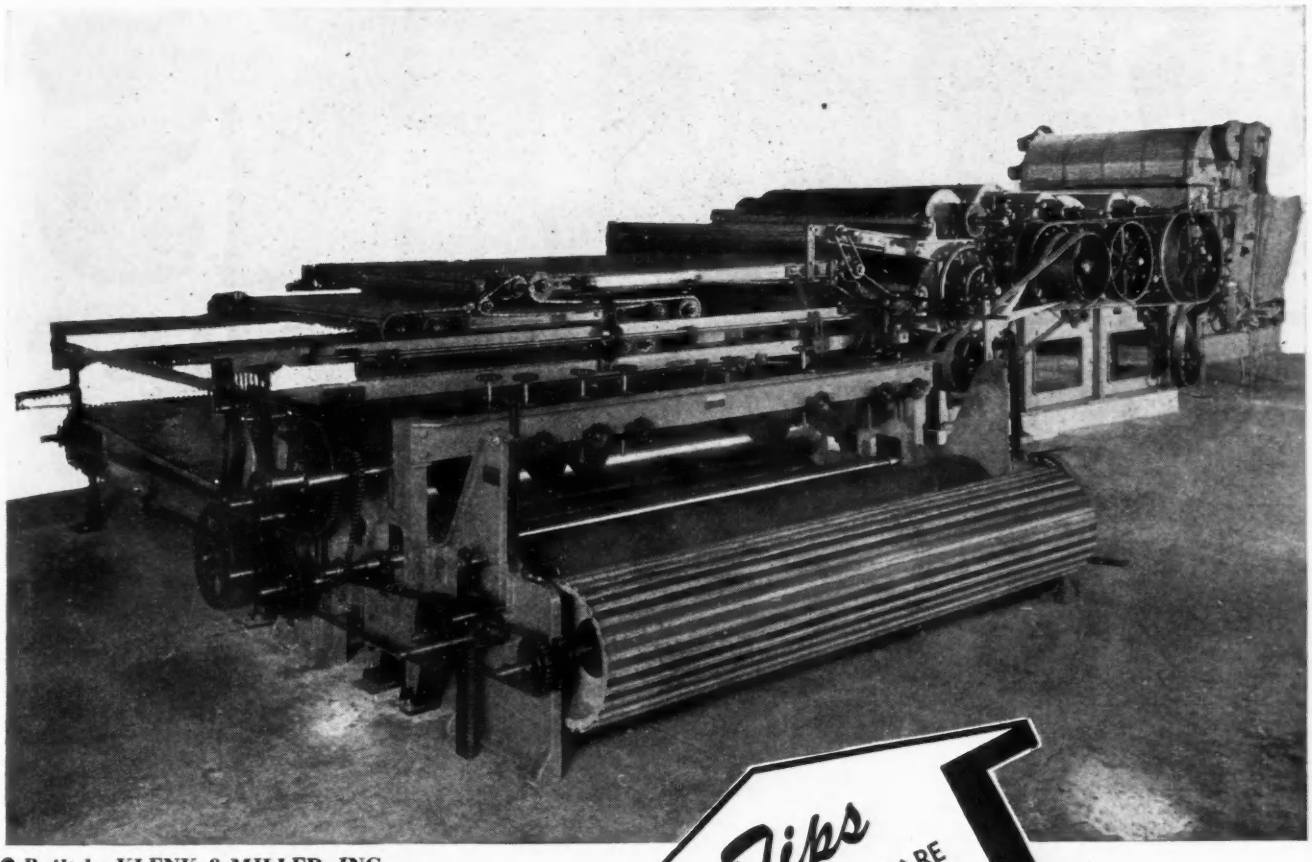
CORRECTLY DESIGNED
ACCURATELY BUILT

Southern Warehouse & Sales Office: Spartanburg, S. C. C. L. Simmons, Mgr.

CONTINENTAL-DIAMOND FIBRE COMPANY

NEWARK, DELAWARE BRIDGEPORT, PA. VALPARAISO, IND. TORONTO, CAN.

# GARNETTS *FIGHT FRICTION WITH SKF BEARINGS*



● *Built by* KLENK & MILLER, INC.

The more SKF Bearings used on Textile Machinery today, the more materials will be produced for war use. By applying SKF's to the rollers of this complete Garnett Outfit, for instance, it is possible to improve the quality of material. Settings are maintained. Horsepower is reduced. Roller speed is retained. Always there's inherent alignment to compensate for shaft deflections, distortions or weave . . . high capacity for useful work at all times. Every moment the power's on, UP goes PRODUCTION. 5292

SKF INDUSTRIES, INC., PHILA., PA.

Tips
ON BEARING CARE
To make present equipment last longer
1. Use clean lubricant recommended by the manufacturer of this machine.
2. Avoid loads and speeds beyond those recommended by the manufacturer.
3. If necessary to remove bearings, keep them properly lubricated. Avoid the intrusion of water and dirt. Apply pressure on the inner race only. Don't hammer outer race.
SKF
BALL AND ROLLER BEARINGS

*Cut out for the job!*

# STALEY'S
# TEXTILE STARCHES

Staley's CORN AND SOY BEAN PRODUCTS

*Staley* manufactures a complete line of unmodified and modified corn starches.

For any textile requirement ...the ANSWER IS STALEY'S

**A. E. STALEY MANUFACTURING COMPANY**
DECATUR ILLINOIS

ATLANTA, NEW YORK CITY, SPARTANBURG, CHICAGO, BOSTON

JOHNSON BRONZE

Ledaloyl SELF LUBRICATING REG. U.S. PAT. OFF.

POWDER METALLURGY

*Over 2000 Stock Sizes*
. . . enable you to make a further saving in time and money. Write for our new catalogue.

# *The* BEARING *that* LUBRICATES *itself*

Oil is the life blood of every motive unit. In order to gain smooth, quiet operation; long, satisfactory bearing life, we must have the right amount of oil . . . in the right place . . . at the right time.

Johnson LEDALOYL bronze bearings provide this type of performance. Evenly distributed over all surfaces of every LEDALOYL bearing are millions of tiny, evenly spaced pores. Each of these pores serve as miniature oil reservoirs. Heat, generated by the turning of the shaft, draws the oil from the pores into the bearing area. Thus, a thin, protecting film of lubricant separates the shaft from the bearing, reduces friction to a minimum and assures long, satisfactory life. When the shaft stops, the oil is absorbed by the bearing.

Johnson LEDALOYL Bearings are ideal for any place where lubrication is hard to achieve, likely to be neglected, or where excess oil might damage goods in process.

Johnson LEDALOYL Bearings will help you simplify your designing problems . . . cut your installation costs. Before you start on a new design, get the facts regarding LEDALOYL. A Johnson Engineer will gladly review your applications at your convenience. As we manufacture ALL TYPES of Sleeve Bearings, he will base his recommendations strictly on facts . . . free from all prejudice. Why not call him in . . . TODAY?

JOHNSON BRONZE

SLEEVE BEARING HEADQUARTERS

The MOST COMPLETE SLEEVE BEARING SERVICE in the WORLD

530 S. MILL STREET NEW CASTLE, PA.

ARMY E NAVY
ARMY E NAVY
Buy War Bonds
"Proudly we hail..."
We're mighty proud—all 6445 of us—of the honor conferred upon us today.
Yes, we're proud of our twin "E" Pennants—proud of our "E" Buttons—proud because we as individuals had a part in reaching the goal that made this award possible.
And we want you to know we're just getting started—that the real significance of today's award lies in the promise of even greater accomplishments in the days to come.
Signed:
6445 Men and Women of the Cone Greensboro Mills
PROXIMITY—REVOLUTION
WHITE OAK—PROXIMITY PRINT WORKS
PROXIMITY MANUFACTURING CO.
REVOLUTION COTTON MILLS
CONE EXPORT & COMMISSION CO., NEW YORK, SELLING AGENTS

FOR PIGMENT PRINTING
and PIGMENT DYEING
in WATER SOLUTION..

# SHO-PAL
THICKENER and BINDER

**WASH FAST** when the printed or dyed cloth is dried . . . eliminates curing.

**DRY PRODUCT** . . . easy to handle . . . saves shipping and storage space.

**NO SOLVENT** . . . does not damage rubber blankets.

**ANY OTHER TYPES of COLOR** can be used because the paste is made up with water.

**WIDE PIGMENT CHOICE** . . . you can select your pigment colors from several sources of supply.

**NO STRATEGIC MATERIAL** or homogenizing equipment required.

*High Quality Results at Low Cost.*

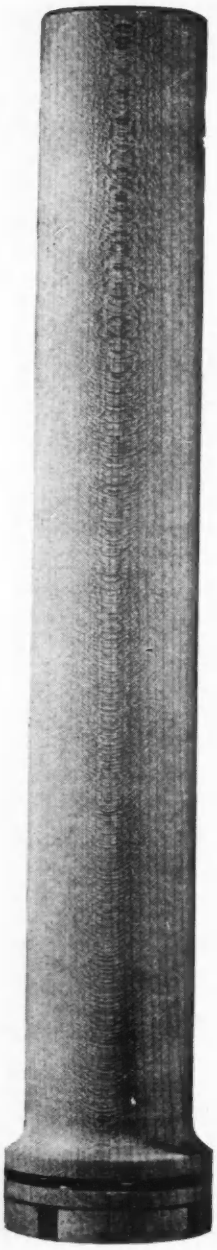
Prove these values for yourself.
Order a trial lot of Sho-Pal today.

**STEIN, HALL MFG., CO. ★ STEIN, HALL & CO., INC. ★ STEIN, HALL, LTD.**

2841 South Ashland Ave., Chicago 285 Madison Ave., New York City 250 Van Horne St., Toronto, Can.
1011 Johnston Building, Charlotte, N. C.

LABORATORIES AT: NEW YORK · CHICAGO · CHARLOTTE · PROVIDENCE · LONG ISLAND CITY, N. Y.

77 YEARS OF SERVICE SUPPLYING HIGH QUALITY STARCHES, GUMS AND DEXTRINES FOR SIZING, PRINTING AND FINISHING.



# Wartime Needs Demand Bowen-Hunter Bobbins

*True to the Gauge*

**Bobbins**
**for**
**Card Room**
**Automatic Loom**
**Filling**
**Warp**
**Twister**

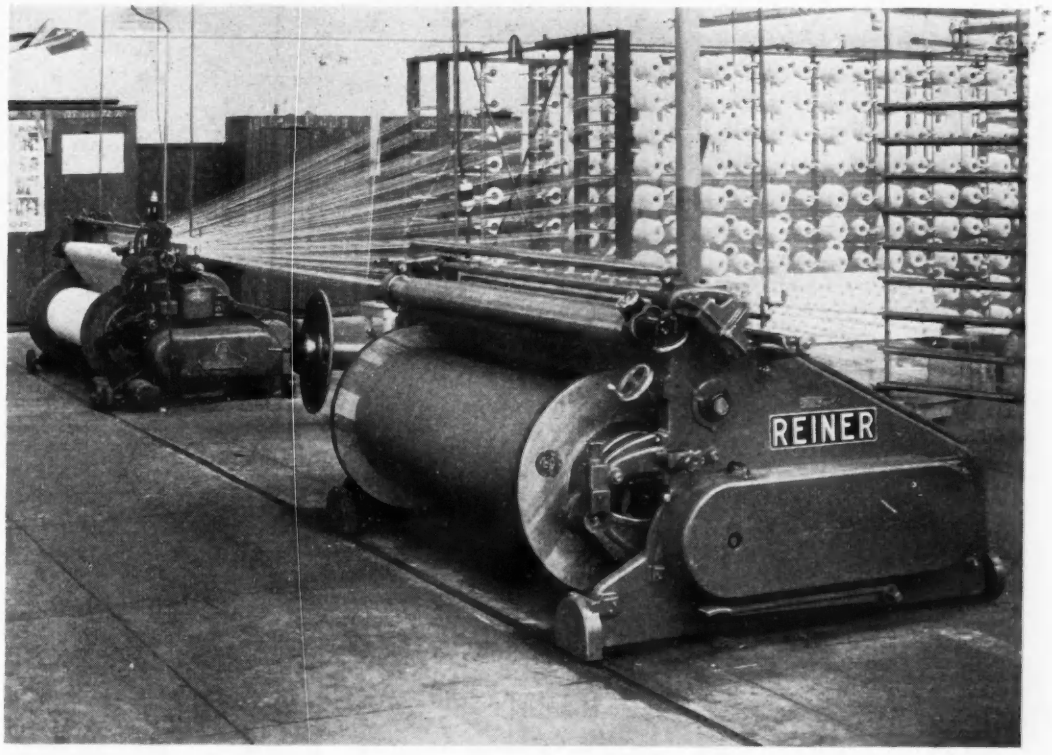
## From The Rock Maple Of Vermont

Nowadays — when everything must give harder service and longer service — Bowen-Hunter Bobbins are the wisest kind of investment. Bowen-Hunter Bobbins have proved their superiority on all kinds of jobs. They are made of high quality selected Vermont Rock Maple — a tougher, harder wood than other maples that can be used. And they are made by Vermont craftsmen with long experience and true pride in doing work well. The next time you need bobbins, buy the best — Bowen-Hunter.

## BOWEN-HUNTER BOBBIN CO.
**East Corinth, Vermont**

*Southern Representatives:* The McLeod Companies, Greensboro, N. C., and Greenville, S. C.

ROBERT
REINER
INCORPORATED




***The Reiner High-Speed Warper and Creel in Production.***

"APPROVED BY EXPERTS" the most advanced warper on the market for beaming filament rayon, spun rayon, cotton, wool, worsted linen, etc., with—*WARPING SPEED CONTROL.* Constant warping speed automatically adjusted without clutch or mechanical drives. In addition, a stepless speed range permits speeds of from 50 to 1000 yards per minute.

*EXTRA* slow, sensitive starting speed—independent of warping speeds.

*DIRECT BEAM DRIVE* permits adjustable and constant pressure of the yarn roller.

***We are still building Warpers and Creels for the Textile Industries. "MACHINERY" can be obtained against Priority Rating.***

# ROBERT REINER, INCORPORATED

**WEEHAWKEN** **NEW JERSEY**

***(Ten minutes from Times Square via Lincoln Tunnel)***

## This Test Shows the Very Real Advantage of the CONCAVE SIDE!

**What Happens When a V-Belt Bends**

FIG. 1

FIG. 2

Grip the side-walls of *any* V-belt as it bends. You will *feel* its sides change shape. The top of the belt becomes narrower because it is under tension. The middle of the side-wall bulges out. You will see that a *straight-sided* V-belt must assume, when it bends, the shape shown in figure 1 (on the left)—a shape that *doesn't fit the sheave groove.*

Now try the same test with a Gates Vulco Rope. You will find that the *same shape change merely straightens* the precisely engineered Concave Side (See figure 2). There is no side-bulge. This insures uniform side-wall wear:—*longer life!* Moreover, the full side-wall of the belt uniformly grips the pulley. It therefore carries heavier loads without slipping—a saving in belts and also a saving in power.

Only belts built by Gates are built with the Concave Side, a Gates patent.

435

## THE GATES RUBBER COMPANY

*Engineering Offices and Stocks in All Large Industrial Centers*

# GATES VULCO ROPE DRIVES

**CHICAGO, ILL.** 549 West Washington
**DALLAS, TEXAS** 2213 Griffin Street
**NEW YORK CITY** 215-219 Fourth Avenue
**BIRMINGHAM, ALA.** 801-2 Liberty National Life Building
**DENVER, COLO.** 999 South Broadway
**CHARLOTTE, N. CAROLINA** 507 Builders' Building
**GREENVILLE, S. CAROLINA** 104 West Washington Street
**ATLANTA, GA.** 738 C. & S. National Bank Building

Just as the experienced runner saves something for the homestretch, so do many buyers of card clothing insure themselves against emergencies by doing business with Ashworth, for this company has . . .

**3 FACTORIES** which assure an uninterrupted supply of card clothing. If one factory is temporarily disabled, another factory can "pinch-hit" for it.

**6 REPAIR SHOPS** which facilitate convenient and prompt repairs and which again insure you against emergencies.

**7 DISTRIBUTING POINTS** which speed up deliveries of those items we have in stock and facilitate personal contacts when the mill has card clothing problems.

These buyers also know that Ashworth Products are dependable, for we are "Pioneers in Card Clothing".

★ ★ ★

# ASHWORTH BROS., INC.

Woolen Div., AMERICAN CARD CLOTHING CO.

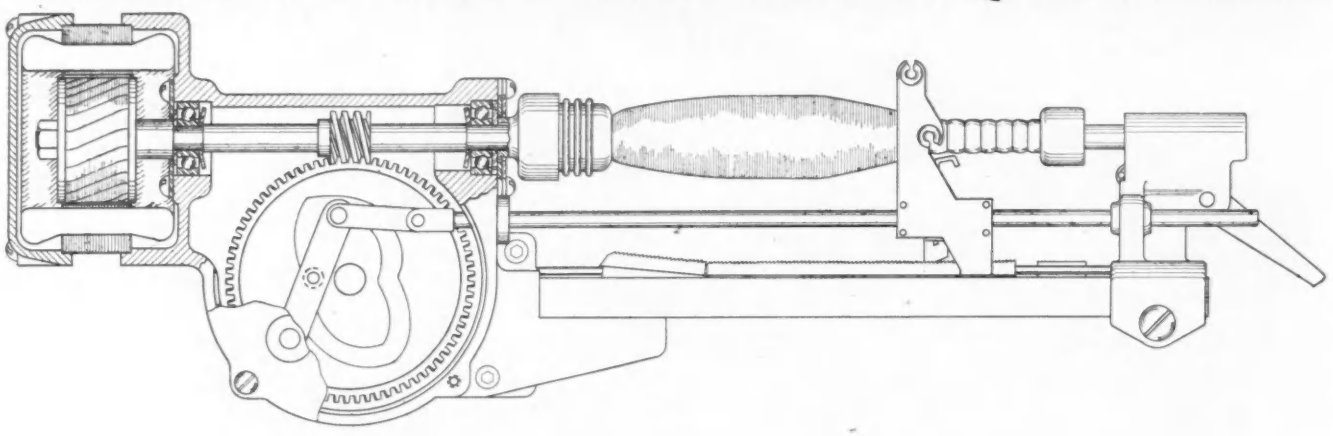
**Fall River*†‡, Worcester*‡, Philadelphia*†‡, Charlotte†‡, Greenville†‡, Atlanta†‡, Dallas†‡ (Textile Supply Co.).**

**Factory. †Repair Shop. ‡Distributing Point.*

ASHWORTH
PIONEERS IN
CARD CLOTHING

**PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed.**

# ABBOTT AUTOMATIC QUILLER



## All there is to the winding units:—

A low voltage three phase motor drives the spindle directly

Double throw cam gives overlapping layers of wind

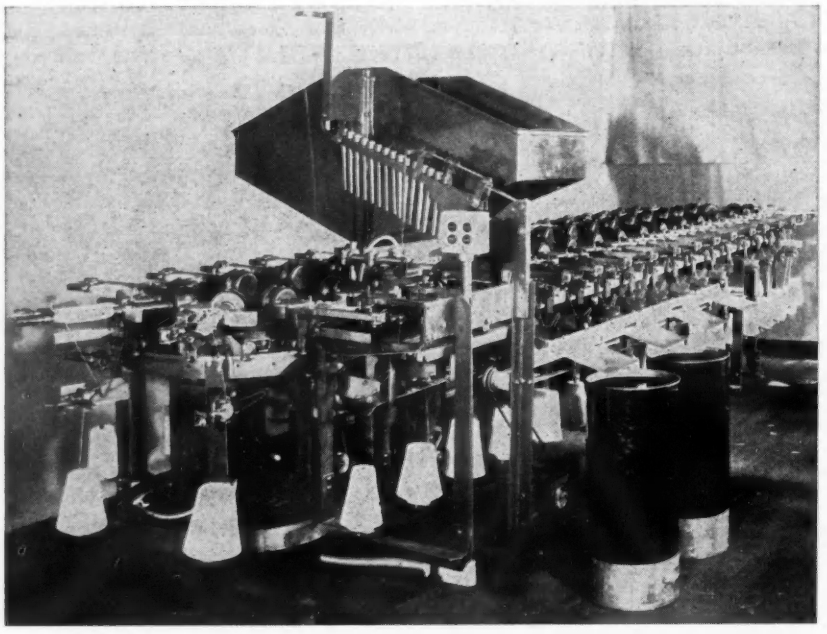
Diameter and shape of bobbin easily and accurately controlled by a feeler working against a stationary rack

Detectors stop motor when bobbin is full or when thread breaks

Spindle speeds up to 5000 RPM

Winds cotton, worsted, woolen, silk, rayon, etc.

Bunch is controlled by making one adjustment instead of adjusting all winding units.



Low investment cost due to simple construction, and use of *ONE* automatic head to serve all spindles.

Low labor cost due to feeding bobbins from a large central supply.

# ABBOTT MACHINE COMPANY

**WILTON, N. H.**

***Southern Representative. L. S. Ligon. Greenville, S. C.***

# LUBRIPLATE SAVES 3 WAYS

LUBRIPLATE lubricants had to be good to earn the place they enjoy in the Textile Industry.

Yes, they save in three ways. They permit top speed operation of machines. They reduce shut-down for repairs to a minimum. They save on the costly replacement parts that are so hard to get these days.

LUBRIPLATE lubricants range from the lightest spindle oil to the heaviest greases. Each does a specific job in the Textile Industry better than a conventional lubricant. Water-resisting types of LUBRIPLATE set a new standard of lubrication under humid conditions. Ball bearing LUBRIPLATE is so effective that mills that have used it believe they could not operate without it. LUBRIPLATE Lubricants have brought in unsolicited testimonials from all over the country.

Under today's conditions, you need LUBRIPLATE more than ever before. Let us send you a free copy of "The LUBRIPLATE Film" written especially for the Textile Industry.

**LUBRIPLATE DIVISION**
**FISKE BROTHERS REFINING COMPANY**
NEWARK, N. J. **SINCE 1870** TOLEDO, O.
WRITE FOR THE NAME OF THE DEALER NEAR YOU

# K.D.T's in the Jungle

OFFICIAL U. S. MARINE CORPS PHOTO

**IN tropical jungles, on desert sands, in frigid lands, on the sea, in the air . . . wherever America's fighting men are relentlessly engaged in Axis annihilation, one will find Kaumagraph Dry Transfers.**

**Long before Pearl Harbor, Kaumagraph research was perfecting new transfers and new processes applicable to the rigid services demanded of textiles for war use.**

**These war products utilize Kaumagraph Dry Transfers in ways almost inconceivable to those accustomed to conventional identification. For the duration, these new K.D.T. developments must, of course, be confined to government products, but they will have important bearing on identification for post-war merchandising.**

**If you have a war product marking problem or if you are looking ahead to the business of peace-time, it will be profitable for you to send for a Kaumagraph Identification Man.**

*Identification Headquarters since 1902*

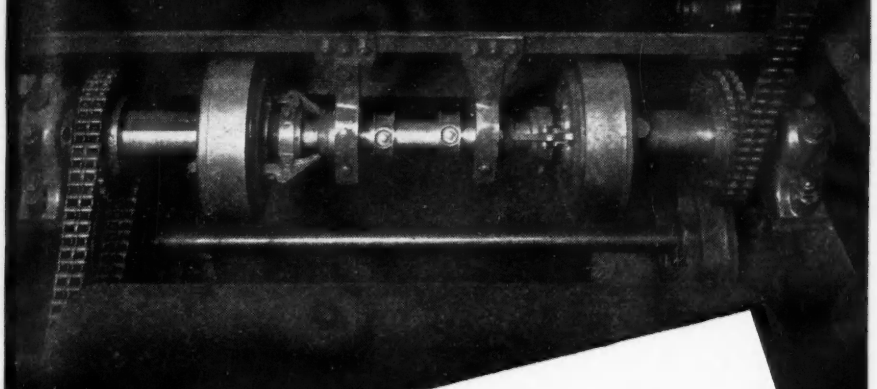
**KAUMAGRAPH**
Wilmington, Delaware

**Dry Transfers**
**Prestomarks**
**Embossed Seals**
**Lithographed packaging**

*New York Office, 16-22 E. 34th St. . . Representatives in Principal Textile Centers of the World*

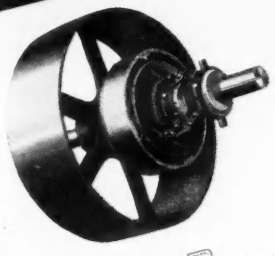
# FULL POWER *Control*
# FREE POWER *Flow*
## WITH STURDY DODGE FRICTION CLUTCHES

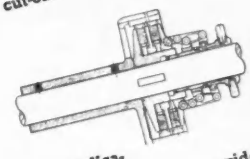
Dodge Solid Friction Clutches in duplex on reversing mechanism of self-propelled hand-reversed Tripper for Belt Conveyor.



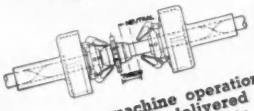
**DODGE**
**SOLID FRICTION CLUTCH**

Clutch with sleeve, used with pulley, sheave, gear or sprocket. Can also be furnished without sleeve for use as cut-off coupling.





Multiple disc construction reduces pressure required for power transmission. Makes clutch easy to operate. Simple, one-point adjustment provides take-up for any wear on friction surfaces. Compound toggle (on larger sizes) multiplies pressure on shifter; also insures positive release of clutch.



Duplex application: Used for countershaft or machine operations where power is to be delivered alternately to two different points (as in main illustration above). Single shifter engages one clutch or the other.

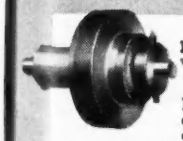
ADEQUATE control of power-flow over the power "roadbeds" of your plant, will minimize power loss. Rugged Dodge Friction Clutches, stationed at proper places on your line shafts or on your machines, assure positive control, and release capacity loads, without loss . . . delivering more horsepower to production machines, to boost battle power!

The Dodge Solid Friction Clutch is one of several popular Dodge types, outstanding for sturdiness, simplicity and economy. It can be quickly furnished for use as a cut-off coupling or with sleeves for mounting pulleys, sheaves, gears or sprockets.

For power transmission on line shaft or on clutch-operated mobile machinery, you'll find the right clutch for every job in the complete Dodge line. Teamed up with other Dodge Power Transmission Equipment, they put all the power into the job, to maintain peak production.

Nearest Dodge Distributor can help you determine whether Dodge Solid, Split, Expanding Ring or Diamond "D" Clutches answer your purpose . . . or write to

**DODGE MANUFACTURING CORPORATION**
MISHAWAKA, INDIANA, U. S. A.



**Dodge Diamond "D" Friction Clutches**

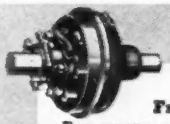
High precision, extremely rugged, compact, simple, fully enclosed, protected against dirt or dust whether engaged or disengaged. Generous safety factor above rated capacity, for momentary shock loads.

**Dodge Expanding Ring Friction Clutches**

A machinery clutch . . . compact, rugged, extremely simple, fully enclosed for protection against dust or dirt. Convenient one point self-locking adjustment. Suitable for a wide variety of light machinery applications.

**Dodge Solid Friction Clutches**

Friction disc type, adapted for general power transmission service as well as many types of machinery applications. Rugged, simple in design, easy to adjust and maintain. Widely used on machinery subjected to severe service.



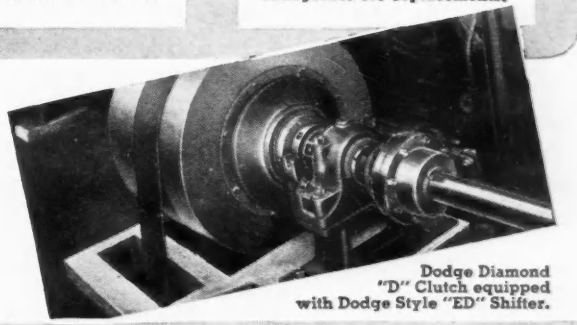
**Dodge Split Friction Clutches**

For severe, continuous power transmission service on big installations. Particularly suitable for large shafts operating at slow to medium speeds. Split construction permits easy installation on shafting already in place. Parts interchangeable for replacements.

# DODGE
MISHAWAKA

THROW ALL YOUR SCRAP INTO THE FIGHT! BUY MORE WAR BONDS!

**THE RIGHT DRIVE FOR EVERY JOB**



Dodge Diamond "D" Clutch equipped with Dodge Style "ED" Shifter.

**PUT *ALL* YOUR POWER IN THE JOB**

## In Rain or Snow or Muggy Heat

Wherever they are — wherever they may go — our fighting men have the constant protection of fabrics finished to meet the needs of global war. With experience born of peacetime service but with a resourcefulness geared to the needs of war, Arkansas takes pride in producing at top speed for textile processing and finishing plants whose fabrics must meet rigid government specifications.

## FUNGICIDE G

For mildew-proofing all types of military fabrics — insect netting, jungle canopies, tentage, sleeping bags, webbing, camouflage netting, etc. Meets government specifications. Non-toxic, non-irritating.

## AQUAROL*

For producing a water-repellent finish on uniform cloths, overcoatings and other military fabrics — used in a single bath treatment with Fungicide G to impart mildew resistance and water repellency.

*Reg. U. S. Pat. Off.

Newark, New Jersey

# Arkansas Co. inc.

CHINES · PROCTOR DRYING MACHINES · PROCTOR DRYING MA

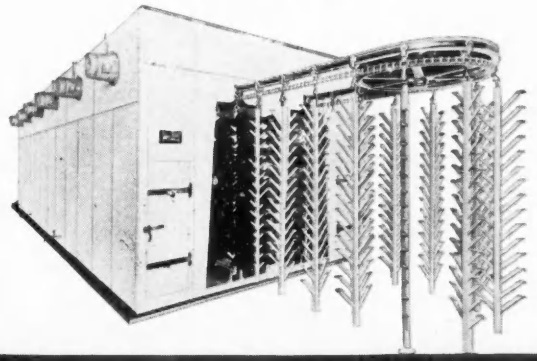
# *Recognition*

## PROCTOR DRYERS

### ARE RECOGNIZED BY LEADING MANUFACTURERS OF FELT HATS

Just as any woman is quick to *recognize* smartness and extra quality in a hat, so leading hat manufacturers are quick to *recognize* the extra quality built into Proctor Drying Machinery. For absolutely uniform results, together with maximum output at a minimum cost in drying fine felt hats, leading hat manufacturers turn almost instinctively to Proctor Dryers. The same is true in nearly every other major industry. Whether it be hats, textiles, pharmaceuticals, chemicals, food, veneer, soap or synthetic rubber, there is a Proctor Dryer scientifically designed and "custom-built" to do the job *right* If you have a drying problem, now is the time to have Proctor engineers consider its solution toward that day when other-than-war products can be purchased. Naturally, if your product is vital to the war effort, we can supply you with new machinery today.

**PROCTOR & SCHWARTZ, Inc.**
**PHILADELPHIA, PA.**



PROCTOR AUTOMATIC HAT DRYER and CONDITIONER for drying wool or fur felt hats. 10 to 12 hours may be required to dry dyed hats in a dry room, whereas the new Proctor Dryer dries them with uniform correctness in 20 minutes for wool felt and 40 minutes for fur felt. This Proctor Machine automatically conditions felt hats with unvarying evenness in from 10 to 20 minutes, thus saving another several hours over other methods.

CHINES · PROCTOR DRYING MACHINES · PROCTOR DRYING MA

# FEWER BREAKDOWNS NOW...

## OF MACHINES EQUIPPED WITH THESE...

UNBRAKO

REG. U. S. PAT. OFF.

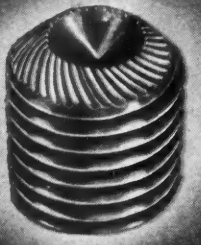
Pat'd. and Pats Pend.

## Self-Locking Hollow Set Screws with the Knurled Points

Yes Sir! When you install "Unbrako" Self-Lockers on your looms and other machinery where there is vibration, you remove one cause of machine breakdowns. When tightened like ordinary set screws, their knurled points dig-in and hold tight . . . keep gears, pulleys, sprockets, and cams from working loose. That means fewer shut-downs . . . less maintenance . . . more and better quality goods produced.

Yet, "Unbrako" Self-Lockers can be removed easily with a wrench and used over and over again. Why not give your machinery this inexpensive protection? Order a supply today from your mill supply house or direct. But insist on getting "Unbrako" Self-Lockers—the only set screws with knurled points.

*Knurling of Socket Screws originated with "Unbrako" years ago.*



Send for our complete "Unbrako" Catalog.

**STANDARD PRESSED STEEL** · BOX 582 JENKINTOWN · PENNA.

BRANCHES: BOSTON, DETROIT, INDIANAPOLIS, CHICAGO, ST. LOUIS, SAN FRANCISCO

# RAYON REPORTS

*Presented Monthly by American Viscose Corporation, New York, N. Y.* JUNE, 1943

## AMERICAN VISCOSE REDUCES RAYON STAPLE PRICES

The first major change in viscose process rayon staple prices since 1937 was made recently when the Corporation reduced the price of its rayon staple one, and in some cases, two cents a pound. The price of dull staple fiber was set at the same level as the bright.

High strength "Avisco" type staple is now offered in 1.5 denier and coarser, at the same price formerly made on the bright type of "Fibro" regular strength rayon staple.

The price of bright tow (parallel filaments of 160,000 total denier and heavier) is unchanged, but the price of the dull type has been lowered, and it is now offered at the same level as the bright.

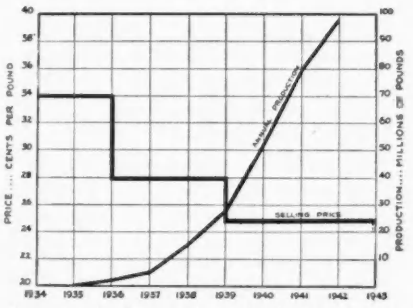



*Chart showing increase in production and decrease in price of standard Fibro rayon staple since 1934.*

Spun dyed rayon staple in black and gray was reduced one cent a pound.

The practical effect of the new price structure is to offer to the trade a higher-strength fiber at the former price of the standard fiber. This is another example of the way efficiencies in production and the use of new techniques have combined to produce better textile fibers at prices that have come down as quality has gone up.

### TOWARDS THE FUTURE!

The expanding military uses of rayon are prophetic of post-war benefits. By improving methods of handling yarns and working to reduce weaving imperfections, weavers are developing an improved product and a greatly advanced technology of both yarn and fabric production. War needs have accelerated development in the industry, and many weaving mills are using counts never before attempted. As a result, they are finding that they have a much greater versatility in producing goods than they ever imagined.

Interchange of information among producers has eliminated many unnecessary and expensive experiments with various types of yarns and fabrics.

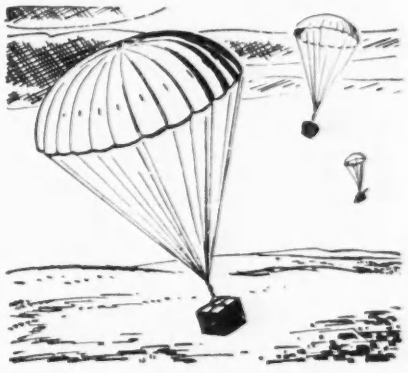
The use of rayon in industrial fabrics will be of increasing importance to industry after the war. Special types of rayon fibers used in tire yarns, cargo parachutes, and for other heavy duty uses will be freed for peacetime applications, and the consumer will benefit from many advantages.

### WAR HELMET FOR WOWS

A new spun rayon and cotton scarf containing "Fibro" staple fiber has been developed as headgear for Women Ordnance Workers. The use of such scarfs has been urgently recommended by the U. S. Army Ordnance Department to eliminate the danger of women workers' hair being caught on moving parts of machinery. The new scarf has been made available to women ordnance workers throughout the country.

### ELASTIC FOR WAACS

The Philadelphia Quartermaster Depot has purchased 75,000 yards of "Vinyon"* braid for use as waistbands in the winter undergarments of the Women's Army Auxiliary Corps. This braid is made of American Viscose Corporation's new type "Vinyon" yarn possessing high elasticity.



### LEWISTOWN PLANT CONVERTS

A program of converting approximately one-half of the manufacturing facilities of the Lewistown, Pa., plant of American Viscose Corporation from the production of regular strength viscose rayon yarns to higher strength yarns for use in military equipment, has been partially completed and these yarns are being shipped to users. The conversion provides yarns of the type needed for fragmentation bomb parachutes, aerial delivery and cargo parachutes and aerial tow targets. The Marcus Hook plant of the Corporation is now 100% on war work.

*T. M. Reg. U. S. Pat. Off.

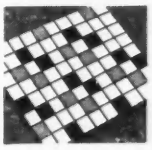
Copr. 1943—American Viscose Corp.


## MAKE USE OF 4-PLY SERVICE!

**1 PRODUCT RESEARCH**
Helps you to get the right yarns.

**3 TEXTILE UNIT**
Helps solve production and finishing problems.

**2 FABRIC DEVELOPMENT**
Helps you design new fabrics.



**4 "CROWN" TESTED**
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

*Producers of* CROWN* *Rayon Yarns and Staple Fibers*

*Sales Offices:* 350 Fifth Ave., New York City; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

*Plants at:* Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

*T. M. Reg. U. S. Pat. Off.

# eliminate the DUST SHIFT

Absenteeism is no problem on the Dust Shift—which works 24 hours a day, every day, if you'll let it—sabotaging operations, increasing rejects, wearing out equipment and slowing down the efficiency of employees.

Maybe this gang is on your payroll without your realizing it. It nearly always is, wherever *engineered dust control* is not on the job.

The American Air Filter Co. has specialized in atmospheric and process dust control equipment for more than 23 years. Why not use this experience to definitely determine if you have a dust condition either troublesome or dangerous that should be controlled? There's no obligation. Meanwhile, send for your copy of "AAF In Industry", a new booklet describing the complete line of American Air Filter equipment and its applications.

The Electro-Matic automatic air filter is widely used in the Textile field to prevent smudging, streaking and discoloration of products caused by dust, smoke and soot. Write for Bulletin No. 250D.

AMERICAN AAF AIR FILTERS

**AMERICAN AIR FILTER COMPANY, INC., 275 CENTRAL AVE, LOUISVILLE, KY.**
INCORPORATED

IN CANADA, DARLING BROTHERS, LIMITED, MONTREAL, P. Q.

"CARD ROPE?"

"SPINNING, TWISTER, OR SPOOLER TAPE? MULE BANDING OR ROPE?"

"CANVAS LUG STRAPS?"

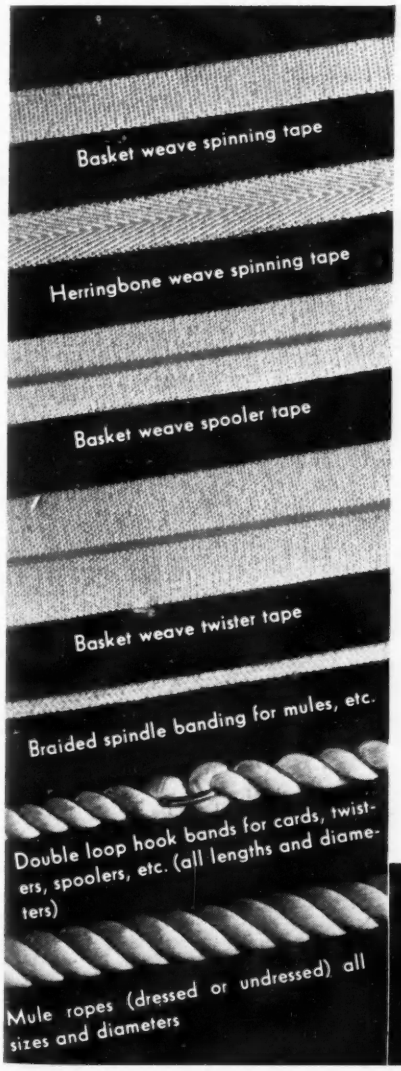
## This "3 in 1" SALESMAN

### Can Save You Time, Trouble and Money

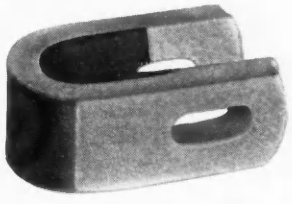
### He Reduces BUYING DISPERSION

The Lambeth Line includes products for 3 departments, — preparatory, spinning and weaving. Therefore when you see the Lambeth representative, you really see 3 salesmen in 1. He represents an opportunity for you to save time, trouble and money, by reducing interviews, correspondence, records and telephone calls, — to CONCENTRATE (rather than disperse) your buying.

And you lose nothing in quality or dependability by so doing. The Lambeth Line is backed by 50 years of honorable dealings with the textile industry. Practical perfection is a tradition with our craftsmen, who have spent many years acquiring a specialized skill.


Basket weave spinning tape
Herringbone weave spinning tape
Basket weave spooler tape
Basket weave twister tape
Braided spindle banding for mules, etc.
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes (dressed or undressed) all sizes and diameters

**"BILTRITE"** (PATENTED)



**CANVAS LUG STRAP**

This product is an outstanding example of Lambeth quality. It's built up and molded in one continuous operation. The glue has no chance to set before the molding is completed. Long life is thus obtained.

*When you think of preparation, spinning or weaving, think of*

**LAMBETH ROPE CORPORATION**

NEW BEDFORD MASSACHUSETTS

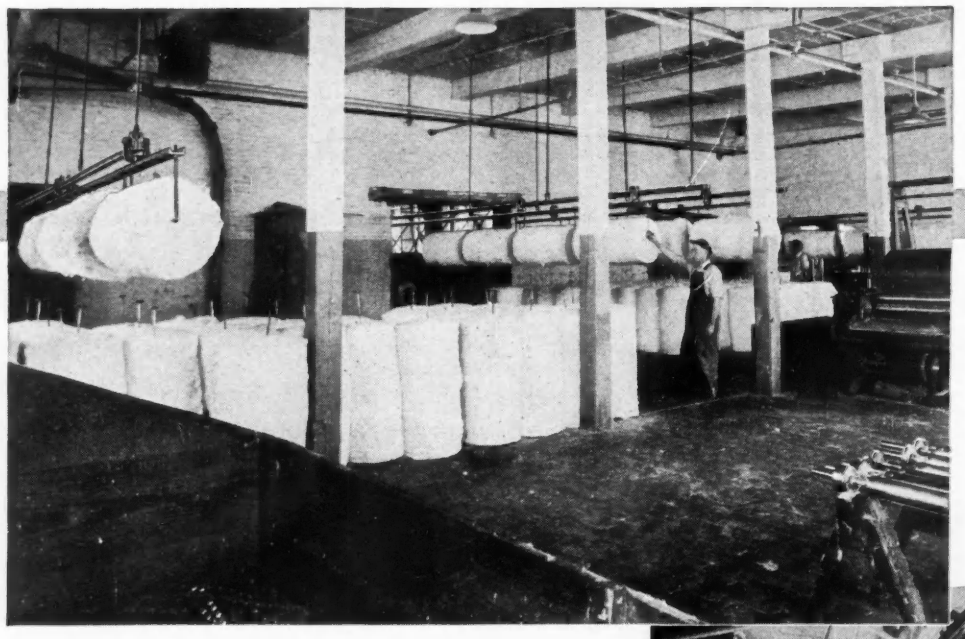
Southern Office, Johnston Bldg., Charlotte, N. C. • Mfrs. of Spinning Tape, Mule Rope and Banding • Sole Agents for Lambeth Products Corp., Antrim, N. H. Makers of Canvas Lug Straps

*The Lambeth Line*

1 SUPPLY SOURCE FOR 3 DEPARTMENTS

PREPARATION • SPINNING • WEAVING

# *Utilize* CEILING SPACE *and Save* FLOOR SPACE

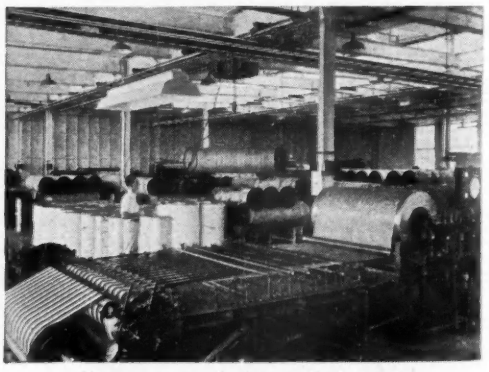


Laps move to card room on special MonoRail carriers.

IN HUNDREDS of textile mills, from opening room to shipping room, throughout the entire process, American MonoRail equipment is eliminating congestion and damage in transit relieving men of lifting and carrying and enabling them to give full time to production. It is putting to best advantage many thousands of feet of floor space by enabling higher piling of materials, better and closer arrangement of machinery and equipment.

American MonoRail Equipment is extremely flexible. Standard parts fit quickly into complete systems to meet a wide variety of handling problems. An American MonoRail system can carry your product at the lowest possible cost and the highest possible efficiency. Our engineers will gladly show you how it can be done in your mill. Remember — overhead handling reduces handling overhead.

Overhead handling in a dye house.



Cranes serve slasher and storage.

**THE AMERICAN MONORAIL CO.**

**1310b Athens Avenue** ★ **Cleveland, Ohio**

JUNE, 1943
Volume 107 Number 6

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ATLANTA, GEORGIA

# COTTON
SERVING THE
## Textile Industries

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Industrial Rubber
Know-How!
Product of 37 years of hard won "know-how" in the development of industrial rubber products, the Dayton De-Luxe Picker is *mill-proved* to be smooth, long-lived—and *tough enough* to take the *constant* pounding of high-speed looms.
MILL-PROVED TO GIVE MORE TROUBLE-FREE PRODUCTION AT LESS COST
1. Cut Picker costs up to 50%.
2. Greatly increase production.
3. Save operating time.
4. When boxed, loom stays in parallel.
5. Throwing a crooked shuttle is eliminated.
6. Jerked-in fillings reduced to a minimum.
7. Month-after-month service on high-speed looms.
The DAYTON RUBBER Mfg. Co.
Dayton, Ohio
Waynesville, N. C.
Originators and Pioneers of Synthetic Rubber Products Since 1934
MAIN SALES OFFICE
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DX
PAT. PEND.
PATENTED
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DX
Dayton* Pickers
A THOROBRED* PRODUCT BY DAYTON
*Reg. Trade Mark, The Dayton Rubber Mfg. Co.

# SHORTS AND REMNANTS

## Happy Birthday to Us

It seems that we are always celebrating somebody's birthday or anniversary on this page, so here goes for one for ourselves. We almost passed it up, but five years ago January, 1938, (please save the flowers for the twenty-fifth) we foisted this column upon COTTON'S unsuspecting readers. Dedicated to the proposition that all men are interested in the other fellow's mail, and having no other place to show off, we have rambled on from complimentary letters to orchids for advertisers, anniversaries, puzzles, jokes, pictures of everybody including ourselves, comments on the war, New Deal, etc. Whenever the editor has something he hates to throw away, but has no place for, into our basket it goes. Certainly it is the only place we can think of where Joe Louis and a cocker spaniel appropriately rate the same page, as this month.

Beginning this month, we are going to take full blame for all of it by adding the initials. You know, Old Timer and Contributor No. XYZ and a lot of other pen names can speak more freely and contribute more by remaining anonymous, but as we once said, this is a "back-patting" page, and after five years, we might as well take the blame for it.

One smart New York advertising agency man once told us that a good deal of our paper was corny and especially that high school weekly column "Scraps and Something or Other". We had to set him right on that. Those "Remnants" came from left-overs from some very fine clothes and that heading is a thing of beauty forever. Also, we like this job of patting ourselves, our readers and our advertisers on the back, and hope that you enjoy it, too. Possibly not all of us, our readers and our advertisers, are all wool and a yard wide; and maybe some of the guys who should and don't do business with us are not complete heels; but you see, we are prejudiced.

If an article's good enough to get wide comment, whether it's on straightening full-fashioned needles, winding, running rayon, flame-proofing, or what have you, it's good enough to get further mention, and this is the page for it. Sometimes, when we look over the places these comments come from, all over the world and from all types of mills, it makes us proud of the many readers, both new and old, and more anxious than ever to give them their money's worth. So draw up a chair and have a piece of cake—non-rationed—and with five candles on it.

J. C. C.

## "The New Robber Barons"

If you happened to miss the editorial in April, 1943, COTTON on the above subject, you'd better dig up the issue and read it. At least, GEORGE T. METCALF, president of the advertising agency of the same name, and one of the foremost in the country in the handling of textile accounts, says, "It's time someone called a spade a spade in commenting on this subject and if enough people do it maybe we can eventually get some action". M. EARL HEARD, dean of the Philadelphia Textile Institute, says that "such forthright thinking and writing is like a drink of cold water on a hot summer day, and we need more of this frankness in the press, if we are ever to get our thinking straightened out." To top it off, CARL R. HARRIS, vice-president, The Erwin Cotton Mills Co. at Durham, N. C., says "I think this is one of the best editorials that I have seen you come forth with. Needless to say, the timing and the subsequent events have proven the correctness of your assertions."

◆

## "Modern Rayon Finishing"

It has been several months since we completed the series on "Modern Rayon Finishing" and announced reprints on the entire series but we are still getting requests such as that from R. E. SEMMLER of The Duplan Corporation, New York, N. Y., who writes for three copies; and from FRANCIS TRIPP, head of the chemistry department at New Bedford (Mass.) Textile School, who writes for a set of these reprints to use in his lectures for his senior classes.

**Many textile concerns are adopting informative labels to give exact contents of fabrics, together with instructions for care, washing, etc. Pioneers in this field are Pacific Mills, with their widely advertised Factag label. Pacific and their advertising agency, Williams & Saylor, old hands at the business, effectively used the little cocker spaniel above to attract attention to the Factag ad in recent women's papers.**

## Two of Uncle Sam's Fighters

**Heavyweight Champ Joe Louis and Private (f.c.) Stanley Kabasinskey, former Howard Bros. employee, at Camp Cook, Calif. With Howard Bros. for 10 years, the latter is one of 25 Tuffer card clothing boys now in uniform.**

## Wants Psychrometer

"In your February 1943 issue on page 83 you state that the Tallassee Mills are using in their laboratory an electro psychrometer which shows the amount of moisture present in yarn without having to bone-dry it. I am interested in one of these instruments for one of our plants and will appreciate your advising me if you have any more information regarding the efficiency of this unit. . . ."

M. K. THACKSTON
Purchasing Agent,
Spartanburg, S. C.

[Mr. Thackston is purchasing agent for such mills as Abbeville (S. C.) Mills, Darlington (S. C.) Mfg. Co., Drayton Mills, Spartanburg, S. C., Union Mills, Union, S. C., Gainesville (Ga.) Cotton Mills, Hartsville (S. C.) Cotton Mill, Judson Mills, Greenville, S. C., Laurens (S. C.) Cotton Mills, Lockhart (S. C.) Power Co., Monarch Mills at Lockhart and Union, S. C., Pacolet Mfg. Co. at Pacolet, S. C., and New Holland, Ga. We hope running this listing is not a precedent because one of these inquiries might come along from Hext Perry or E. S. Tennent next month and think of the paper shortage.]

◆

## "Hitting on All Twelve"

"You were certainly 'hitting on all twelve' on the article about Callaway Institute appearing in April COTTON, and I hasten to add my thanks and congratulations to you for the splendid way in which you handled this. . . ."

FULLER E. CALLAWAY, JR.
President,
Callaway Mills,
LaGrange, Ga.

## Alex Is Cited

**Lieut. Col. Alexander R. Davis has received the War Department's Distinguished Service citation for his part in redesigning the crate carrying the tail fin of a bomb, effecting a great saving in steel. Alex will be remembered by his many friends throughout the textile industry as a sales representative for Saco-Lowell Shops, working out of Charlotte, N. C. A Georgia Tech boy, he is the son of the late Rogers W. Davis who was southern manager for Saco-Lowell at the time of his death. Congratulations, Alex.**

# *TESTING TEXTILES* at 60° below

### NEW ROHM & HAAS COLD ROOM

This war is being fought in cold climates, in the extreme cold of the sub-stratosphere. To meet the resulting demands on products and finishes, Rohm & Haas Company has constructed a new laboratory where the temperature can be kept at 60° below zero. This cold room enables Rohm & Haas chemists to get a better understanding of the requirements for the best textile finishes for cold weather clothing and equipment.

### ONE OF OUR CHEMICALS MAY BE *YOUR* ANSWER

The Rohm & Haas Textile Laboratories are constantly developing modern checking and testing devices. Men long experienced in textile manufacturing and mill problems are ready to help you—whether your problem is yarn sizing or desizing, dye penetration or dye stripping, soft finishes or stiff finishes. Accumulated data on new chemicals, new resins and new methods of evaluation may help throw light on a question for which you have not yet found the answer.

**TRITONS** —*Synthetic detergents, emulsifying, wetting, and dispersing agents.*

**RHOTEXES** —*Synthetic gums for sizing and thickening.*

**DEGOMMAS** — *Concentrated diastatic and proteolytic enzymes for desizing.*

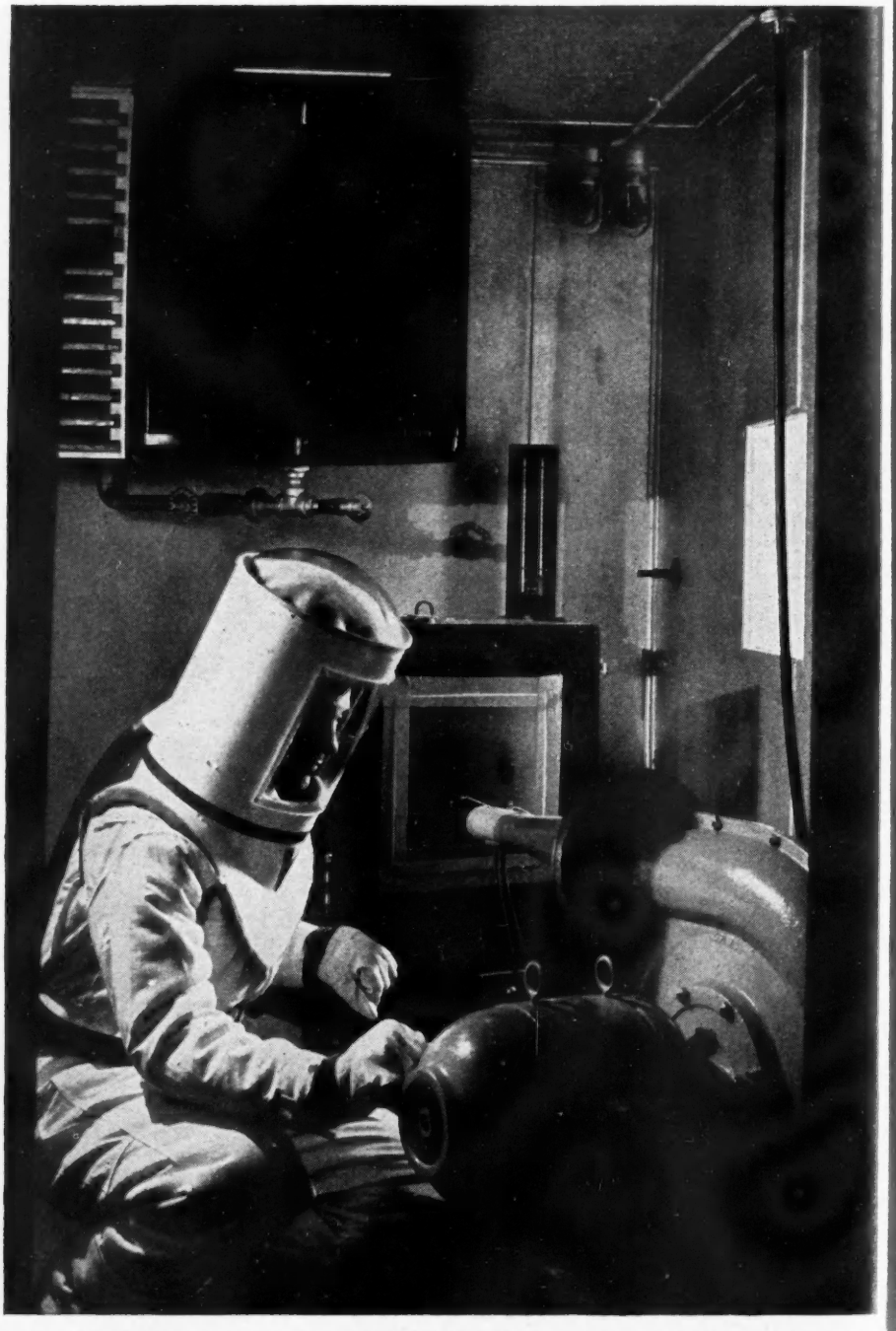
**RHOPLEXES** —*Aqueous resin dispersions for finishing and coating fabrics.*

**RHONITES** — *Modified urea formaldehyde resins for textile finishing.*

**PROTOLIN** — *Stripping agent for wool stock and piece goods.*

**FORMOPON** — *Reducing and stripping agent in acid systems.*

**LYKOPON** —*Reducing and stripping agent in basic systems.*



TRITON, RHOTEX, DEGOMMA, RHOPLEX, RHONITE, PROTOLIN, FORMOPON *and* LYKOPON *are trade marks, Reg. U. S. Pat. Off.*

## ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Chemicals including Plastics . . . Synthetic Insecticides . . . Fungicides . . . Enzymes . . . Chemicals for the Leather, Textile and other Industries

COTTON
SERVING THE
Textile Industries

Vol. 107 June 1943 No. 6

# Have You Been Re-Negotiated?

IN ORDER to produce the necessary materials for conducting the war, it was necessary to put a tremendous number of American manufacturing plants to work on products entirely foreign to their equipment or experience. It was also necessary to build new plants to make things that had never been made before in quantities in this country. It was inevitable that, as these new plants swung into quantity production and as old organizations became familiar with the manufacture of new things, the cost of production in these war plants would rapidly drop and the plants would show tremendous profits on their war contracts.

As these profits began to come to the attention of the various Government agencies concerned with price and profit regulation, it seemed expedient to set up a board for re-negotiating some of these Government contracts that appeared to carry grossly inflated prices. Certainly there could be no objection to such re-negotiations where concerns had originally bid entirely in the dark and purely by guesswork, and later found that the bid prices were exorbitantly high. However, the outcome of this sort of legitimate and reasonable re-negotiation led to the establishment of a definite Government policy aimed at the re-negotiation of all kinds of Government contracts.

It is rather difficult to see why this should be necessary where a properly accredited agency of the Government has established a ceiling price for a commodity and the producer has contracted with the Government to supply the commodity at or below that ceiling price. If the producer can stay within the ceiling and make a good profit on his operations, surely the excess profits tax ought to correct any real or fancied inequity in the contract price of that commodity. Where the Government buys from a long-established manufacturer a product which that manufacturer has produced for years, and where the contract for the product is awarded after competitive bidding, it seems not only a waste of time, but a positive injustice, for the Government to harass and bedevil the producer of such materials with these re-negotiation wrangles.

Practically all textile products that the Government needs have been manufactured for many years, and both the Government procurement agencies and the trade in general know almost exactly the proper ceiling prices for such goods. When the OPA has established a ceiling price for textile goods it would seem that the manufacturer should at least be permitted to consider that ceiling as a legitimate selling price, not subject to question by some Government board anxious to penalize good management which is still able to produce a profit after the Government has set a ceiling price on goods, but no ceiling price on the costs entering into the production of the goods.

SOME VERY peculiar situations have arisen in some of these re-negotiation proceedings. One large producer who has specialized for many years in a certain fabric now largely in demand has found that increasing costs of labor, cotton and other manufacturing items have made the production of that particular fabric unprofitable. The original ceiling price on this particular fabric was established largely on the basis of the selling price this mill had placed on the fabric at the time the ceiling was imposed. Since the mill had been making the fabric for many years and was producing it most efficiently, its selling price was relatively low. Since that time, the increased Government demand for this fabric has necessitated obtaining it from other mills, and these other mills, having never produced the fabric before, are permitted to establish a selling price of their own based on existing costs. The first mill, which has been making the fabric for years and is a very large producer, is forbidden to increase its selling price on this fabric even though some of its competitors lately engaged in the production of the cloth are allowed a substantial price increase on the basis of the same mounting operating costs that affect the older producer.

On top of this, the re-negotiation board wishes to go over all of this producer's contracts and cut some of its prices, although they are not willing to recommend an increase in the price of the fabric on which the mill loses money.

Another large manufacturer reports that he was approached on the question of producing a fabric which he had previously not made, and upon finding that there was a continuing demand for this material, he spent quite a large sum of money for equipment required to change some of his plant over to this new fabric; assuming that under the existing regulations the Government would permit him to price his new product at a level which would cover the cost of conversion. He now finds that he made a mistake, and should have got the Government authorities to agree on a price for these goods before he put out any money. He is now making the fabric and stands to lose money on it unless some adjustment in the price is made,

since the constantly increasing wage and material costs have left practically no margin in this fabric at the ceiling price.

IT WOULD certainly seem that Congress would be justified in limiting the activities of this re-negotiation board to those manufactured items which are not covered by price ceilings, and definitely forbid the re-negotiation of contracts for ordinary commodities sold under competitive bidding. There is no way of computing the time, effort and money wasted by having one more agency poking around among the books of a corporation and pestering the management to the extent necessary to get at the costs of a great range of yarns or fabrics. The excess profits tax is plenty drastic enough to take care of anything the producer of an ordinary commodity can make under a system where there are definite ceilings on his selling prices and none on his costs.

Certainly there is ample justification for ferreting out extravagance or crookedness in some of these special war plants for new things, where nobody could figure the cost in advance, and in those plants where the Government has advanced substantial sums, often hundreds of millions of dollars, for the building and operation of the plants. There are hundreds of large war plants which have been financed on a rather lavish basis with public funds, and the Government should certainly keep an eye on these plants to see that the public money has not been wasted beyond the almost unavoidable waste of construction under present conditions. The textile industry, however, has obtained virtually no money from the Government for constructing new plants or operating old ones, except such funds as have been borrowed from the RFC under policies established before the war. The textile industry, more than any other large war supplier, has gone ahead under its own steam and has financed its own conversions and expansions. It has, in the main, asked nothing of the Government except the opportunity to bid for war business on a competitive basis, and with few exceptions, all Government purchases of textiles have been made under open, competitive bidding practices.

In some of these highly specialized war plants, the conditions have been quite the reverse. There have been several highly publicized cases of incredible extravagance, where war contractors have paid stenographers bonuses of $25,000 a year or more and in other ways sought to give away to their help the fabulous profits that were piling up, rather than offering to reduce their prices to the Government voluntarily. Undoubtedly a great many of these war production plants have been profiteering, and many of them needed some Government agency to re-adjust contracts that were definitely gouging the Government. In many of these cases, the excess profits tax was inoperative, because the contractors chose rather to give the profits away than to bank them and pay their taxes. This not only resulted in swindling the Government, but in creating a most unfortunate inflationary condition by providing small armies of employees with what the Government is pleased to call "unjust enrichment" if the money is received by an employer instead of an employee. None of the arguments in favor of the contract re-negotiation under these conditions can apply to contracts with the vendors of ordinary commodities covered by OPA ceiling prices. The textile industry should certainly be rid of this pernicious practice of persecuting people who have sold to the Government at prices which the Government declared to be fair, and then are being penalized merely because they were smart enough to make a profit at the Government's admittedly fair price.

# The Modern Peonage

ANY ONE who wishes to believe that all of the coal miners who were ready to go on strike May 1 were willing followers of John L. Lewis and indifferent to their responsibilities to their country is welcome to believe it. For our part, we feel that unquestionably there were tens of thousands of these miners, or even a majority of them, who cared enough about their relatives and friends in the armed services, and the country which has afforded them the highest standard of living enjoyed by coal miners anywhere, to have gladly worked if they dared. These powerful labor organizations which have now been made even more powerful by the connivance of the Federal Government and the collusion of the courts hold their members in a sort of peonage from which there is no escape. A man who belongs to one of these well-knit labor unions, like the coal miners' union, has no more personal economic freedom than a peon. He cannot work unless he belongs to the union. Upon joining the union, he becomes its slave. He cannot refuse to join if he expects to work; he cannot refuse to pay his dues, because they are taken out of his pay check, and he cannot refuse obedience to dictatorial union bosses unless he is prepared to abandon his trade and his community and move out into entirely new fields.

We are watching with the utmost interest the outcome of this coal miners' controversy. Our Government's almost complete lack of any labor policy whatever, except the policy of settling everything the way the union wanted it settled, has finally put the Government in a position where there seems to be nothing it can do about this coal miners' problem that will not be wrong. If the Government gives the miners anything at all, it can expect to have every other union in the country on its neck immediately. If the coal miners do not get anything and strike, then apparently nothing but armed force can break the strike, unless the Government backs down and settles with the miners on their terms—a perfectly suicidal policy. So, we are looking forward with the keenest interest to the settlement of this controversy and expect to discuss it more extensively in a future issue. As we have repeatedly pointed out over a period of many years, the growth in power of these labor rackets would ultimately imperil the very government of this country unless steps were taken to curb and control the power of these racketeers. This coal strike is a perfect example of what can happen when a group of ruthless and grasping men can hold hundreds of thousands of workmen in a state of virtual peonage and force them to be traitors to their country and even to their own sons in the armed forces.

# Spinning Flax for Bags on Cotton Mill Machinery

**Prepared by the State Engineering Experiment Station at the Georgia School of Technology, Atlanta, Ga.**

THE IMPACT of war demands for substitutes for textile fibers such as jute, hemp, henequin and sisal has served to divert the emphasis on the flax processing project at the State Engineering Experiment Station, Georgia School of Technology, Atlanta, from degummed and highly refined types of fiber for medium and high quality fabrics to the immediate production of low-grade fibers suitable for use in bagging, cordage and similar uses for which flax has normally been regarded as too expensive.

Laboratory and pilot plant investigations and mill tests completed in line with this altered objective have demonstrated during the last few months that flax fibers derived from field (or dew) retted seed flax can be successfully processed by the Tech-Flax process at a favorable price (war conditions considered) to produce:

1. 100 per cent flax yarns ranging from .6s to 1.5s cotton count which can be woven into burlap bagging generally superior to any other substitute for jute thus far proposed; and

2. 100 per cent flax twine ranging from .25s to .21s suitable as a substitute for binder twine.

### Processing is Simple

The processing of this seed flax fiber into 100 per cent flax yarn is comparatively simple; the difficulties of spinning (the most serious problem encountered in the work of the project) are largely by-passed by wet-twisting the yarn under tension without the use of some conventional cotton mill equipment. A limited supply of field retted flax straw from the Northwest is available. Its cost is less than fiber flax straw. Plants equipped to convert a considerable part of the straw into tow are already established. While the quality of the fiber obtained lacks uniformity it is of a quality sufficient to meet the requirements for the war uses listed, as well as other uses in the bagging and cordage field.

### The Tonnage Required

The disappearance from the markets available to the United States of jute, hemp, henequen and similar fibers presents an insistent demand for upwards of 20,000 tons of fiber backed by potential demand which may be many times as large. The more pressing textile requirements which seed flax fiber satisfy are raw sugar bagging and other types of bagging, twine, cordage, and non-textile uses.

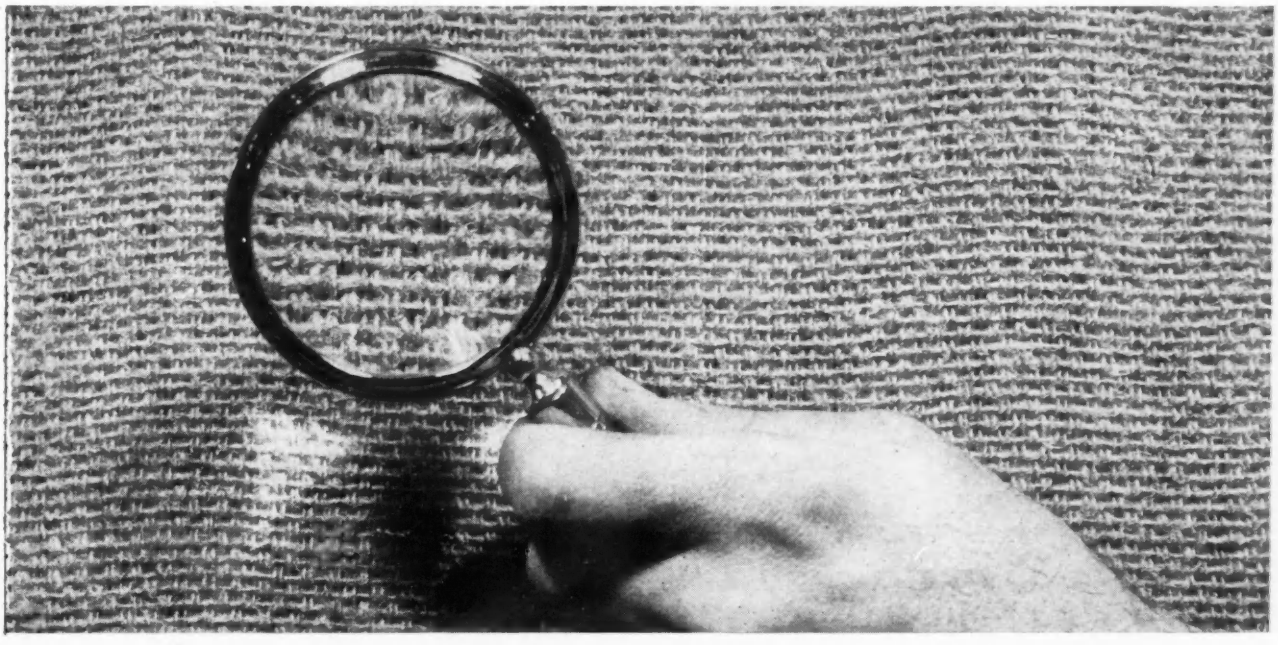
The logistic inference from the general war production situation was recognized by the State Engineering Experiment Station, and the Tennessee Valley Authority, as limiting whatever was done to:

1. The use of straw already being grown;

2. Extracting the fiber with equipment already available; and

3. Producing yarns and fabrics on cotton mill machinery.

Any process, however sound and otherwise desirable, which re-



*A sample (with portion magnified) of flax bag fabric produced at Georgia Tech*

quired new installations, either for extracting the fiber or for textile preparation, would obviously run head-on into WPB restrictions. The solution which has emerged during the fall months of 1942 and which is now in process of commercial application, has been developed with these conditions in mind and appears to meet them completely.

The raw materials are available in quantity. The usual plantings of seed flax in the northwestern states average 2,900,000 acres. Normally the bulk of the straw produced is a by-product waste which the farmer burns. Hence no accurate production statistics are available. But on the basis of estimates by the Minnesota Extension Service, the total usable straw available would be about 300,000 tons. This might be expected to yield, by the somewhat crude decortication methods employed, about 75,000 tons of tow, which when refined at the cotton mill would produce about 25,000 to 33,500 tons of usable textile fiber.

Decorticating plants, apparently of sufficient capacity to satisfy the more pressing of the needs are already located in the growing areas. The "tow breakers" with which they are equipped will reduce the field retted straw to about one-fourth its weight. This treatment is rougher than the Tech-Flax system, so that the tow will yield only from two-thirds to half as much usable fiber as if it had been processed from the straw through the tank retting, decorticating and refining system developed by the State Engineering Experiment Station. In consequence a considerable part of the fibers are damaged and the final recovery of textile fiber ranges from 30 to 45 per cent of the tow weight—from 8 to 11 per cent of the straw, whereas the Experiment Station process would produce from 13 to 17 per cent from similar seed straw.

This dew retted straw does, however, represent an immediately available source from which a part of the fiber needed can be secured. The exact amount will depend on crop and weather conditions. The balance of the 25,000 to 33,500 tons of fiber potentially available in the Northwest will have to be secured from the "green" or unretted straw. This requires the development of a chemical retting technique suitable for this type of straw and the equipment which is available. Work on this process is under way. Some educational work with flax growers will be necessary in order to make the potential supply actually available.

The refining and final preparation of the fiber can be done at the cotton mill by the use of cards and cleaners which are standard cotton mill equipment.

The textile processing so far has only been done successfully on cotton mill equipment. While the present high level of mill production may present a problem in the location of sufficient capacity, it is believed that the four or five mills required can be located. In any event the problem appears to be up to the cotton mills, since the only other solution of the bagging problem appears to be osnaburg, or similar cotton fabrics.

### Flax Bagging Stronger

Bagging appears to be the most important item in this program. The wet - twisting - under - tension process appears capable of producing 100 per cent flax bagging yarns ranging from .6s to perhaps 2.5s cotton count.

The bagging on which most of the testing was done was designed to match the specifications for a standard jute raw sugar bag. Such a bag was carefully studied as a preliminary. The fabric produced was a plain weave with 1.5s warp and .6s filling, 16x8 construction. It required 2.55 pounds of this fabric to produce a bag. Table I presents data on two tests of this fabric in comparison with the specification standard for a Porto Rican jute raw sugar bag, and for a proposed cotton bag.

**TABLE I**

| | Weight Ounces Per Sq. Yd. | Tensile Strength in Pounds Warp | Filling |
|---|---|---|---|
| Tech-Flax Bagging (Warp 16-17 sley, Filling 8 picks) | | | |
| Sample One | 20 | 132 | 128 |
| Sample Two | 21.6 | 129 | 138 |
| A.S.T.M. Standard for Cuban Jute Raw Sugar Bag (1933) | 18 | 125 | 90 |
| Proposed Cotton Twill Bagging | 7.1 | 81 | 88 |
| Tentative Standard | 7.5 | 80 | 80 |

A sample lot of the bagging covered in the test was woven sufficient to produce 300 raw sugar bags. These bags are being tested in actual service. Reports from the initial lot indicate that they will meet the hazards of shipping equally as well, and perhaps better than the standard jute bag.

### Steps in the Process

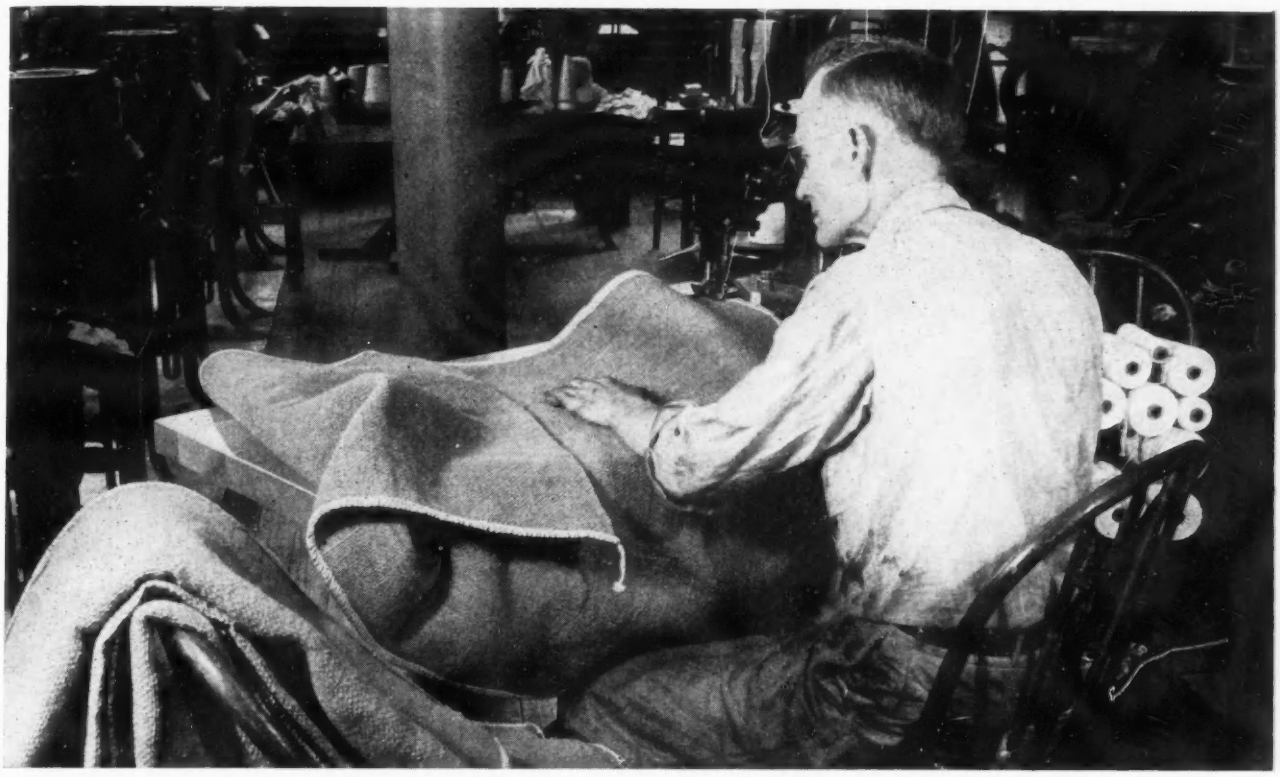
The general procedures worked out in the pilot plant at the Engineering Experiment Station for the utilization of field-retted seed flax can be carried on by the average cotton mill. The tow, when received, still contains a large proportion of shive and short fibers, so it must first be cleaned up before the yarn is made. This cleaning is accomplished with a Centrif-Air cleaner, after which the fiber is run through a garnett waste opener.

The sequence of operations in making the yarn begins with a cotton opener, a 2-beater (carding) one-process picker, a card with continuous stripper, drawing frame, long-draft fly frame followed by wet twisting under tension on a cotton twister.

The possibility of utilizing idle jute system machinery was considered. Samples of refined fiber were submitted to a number of firms having jute spinning equipment. These firms, however, were unanimous in saying that the fiber would not work on the jute system and in recommending some variant of the cotton system.

### Binder Twine and Cordage

The apparent shortage of henequen fiber last fall caused a large number of inquiries regarding the possibility of using flax for binder twine and other rough or heavy cordage purposes. Utilizing the technique already described for bagging yarns a series of twisted twines was produced which ranged from .25s count to .21s count. The tensile strength for these twines averaged only slightly over half that of the henequin sample used



*Sewing one of the bags made from flax spun and woven at Georgia Tech*

for preliminary analysis, but was somewhat over the minimum figure of 40 pounds necessary for use on a binder. The flax twine, however, can be given a greater stiffness than other proposed substitutes, so that, if the necessary tow can be secured, 100 per cent flax binder twine appears a definite possibility.

### Source of Flax

The seed flax straw used by the Experiment Station in developing the fiber used in this bagging is a by-product of the seed flax industry in Minnesota, the Dakotas, Wisconsin and other states in the central northwest. The seed flax is grown as a source of linseed oil. The primary market for which the straw is decorticated is that of cigarette paper manufacture. Some of the tow is also used in the upholstery industry.

The crop is harvested with combines which mow the straw, cut off the seed heads and leave the straw in the field where it dew rets. The dew-retted straw is purchased by the decorticator on the basis of inspection in the field, thereby eliminating straw which is of inferior quality for any reasons such as a poor stand and consequent large stems, or over-retting.

The agricultural work for the project, being carried on by the State College of Agriculture, indicates definitely that flax might profitably be grown in South Georgia as a winter crop. Here, again, the data appears to show that seed type flax is more desirable than the fiber varieties because of the higher seed yield and lower harvesting costs.

This requires fields level enough to permit the use of a combine, or at least a mowing machine. As a broad generality flax can be grown where either oats or wheat can be grown and the planting, growing and harvest times would be about the same.

In the Southeast four types of area have been found more or less suitable for flax culture:

1. As a spring crop in the lower flat valleys of Eastern Tennessee.
2. As a summer crop in the mountain valleys of Western North Carolina, Eastern Tennessee and North Georgia.
3. As a spring crop in Middle Georgia, Western South Carolina and Eastern Alabama, north of the fall line, and
4. As a fall or winter crop along the secondary coastal plain in South Georgia, North Florida, South Alabama and in South Carolina.

It does not appear practical, however, to press immediately for commercial growing in the South. This would necessitate the establishment of retting and decorticating plants requiring critical materials which would probably be unobtainable.

Such a development, however, is being given definite post-war consideration. It offers the economic advantages of a better quality of seed straw, a higher yield of textile fiber and avoids the high transportation costs inherent in using tow from the northwest. At the same time there would be no destructive competition with the northwestern flax grower since the seed production there is only about half the United States' consumption. The possibility even appears that as a peace-time flax industry grew it would be able to absorb a considerable part of the straw grown in the Northwest.

### The Long Term Program

The broad program of flax research which has been going on at the Experiment Station since 1937 and which was interrupted by this emergency demand for bagging and similar products has equally important results which may be expected to be post-war factors in the medium-priced textile field.

The original objective was to develop methods of mechanical decorticating and chemical degumming which would produce a stapled fiber which could be spun on cotton mill machinery.

The results so far attained seem to justify this original objective although the present state of the processes developed indicates the necessity for some modification. It has been found that a partial retting is desirable as a part of the decortication process and some modification of the drawing process in spinning seems essential due to characteristics of the flax fiber.

The cotton-textile industry will emerge from World War II with a greatly increased capacity for production, resulting in the main from a higher efficiency of operation attained under the pressure of war production. Its character will have been somewhat altered under the process. More nearly will the phrase "textile industry" apply since more and more cotton mills are spinning and weaving fabrics from a variety of fibers. Wool, rayon and flax are all "cotton mill" materials since the cotton system appears to be more versatile than any other method of converting fiber into yarn.

This suggests that in the postwar future new types of fabric may be expected to appear and win public approval. They may not necessarily follow conventional and historic trends. Imaginative use of the coarse flax yarns and weaves created for emergency use as bagging may well figure in this postwar development. Linens in general become softer and more pleasing with use. The laundry "degums" the fabric. This might for example lead to public acceptance of an all-flax sheeting which would appear on the loom by present standards as too harsh, but which would provide the insulating and absorptive qualities of linen at a consumer cost no greater than a medium grade of cotton and which would become softer and softer with use.

The general characteristics of flax which make it interesting are: a relatively high hygroscopicity, i.e., it absorbs and evaporates water readily; it is a good conductor of heat; it is resistant to heat; it has a cool feel; it is relatively strong; its elasticity is low; it does not soil easily and germs do not find it as hospitable as other fibers.

These same characteristics in general are found in the stapled, retted, decorticated and refined fibers produced in the Engineering Experiment Station pilot plant as well as in the stapled, retted, decorticated, degummed, and refined fibers. The major exception to this is some loss of yarn strength due to stapling before retting which increases the proportion of short fibers.

### Summary

The more important generalizations which can be drawn from the six-year study are:

Seed flax appears to offer the more possibilities of farm profit than fiber flax because of much lower harvesting costs and higher seed yield.

The tank-retting and decorticating process appears to be the more desirable basis for the eventual establishment of a flax industry.

By segregating the long and short fibers on a French worsted comber it is possible to spin 100 per cent flax yarns of finer counts from the longer fibers on cotton machinery. While 5s (cotton count) are the finest thus far produced in the pilot plant this is not regarded as the limit. The short fibers from the segregation can be used in toweling in mixture with cotton. Fabrics of 75 per cent flax can be consistently spun up to 14s and 50 per cent flax has been spun as fine as 20s.

The chemical degumming process has definite possibilities, but thus far the cost of producing degummed fiber appears too high to create enough textile interest to justify attempting an agricultural development based on this process. It is believed that the mill experience derived from the retted-decorticated and refined fiber may ultimately lead to the solution of spinning fine yarns from this type of fiber.

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### Association and Phi Psi Medals Awarded at Tech

The annual medal of the Cotton Manufacturers Association of Georgia, awarded each year by this association to an outstanding member of the graduating class of A. French Textile School of Georgia Tech, was presented in late April to Vance LeRoy Cathey, of Atlanta, who graduates this year. The presentation was made by Theo. M. Forbes, executive vice-president of the association, at a chicken dinner given by him to the junior and senior class members, the textile school faculty, and members of the Theta chapter of *Phi Psi* textile fraternity.

The association has presented this medal annually for 17 years to the member of the graduating class selected by the textile faculty as being outstanding. The first award, in 1927, went to Benjamin Bugg Peacock, now assistant to Robert J. Dempsey in the textile machinery division of WPB.

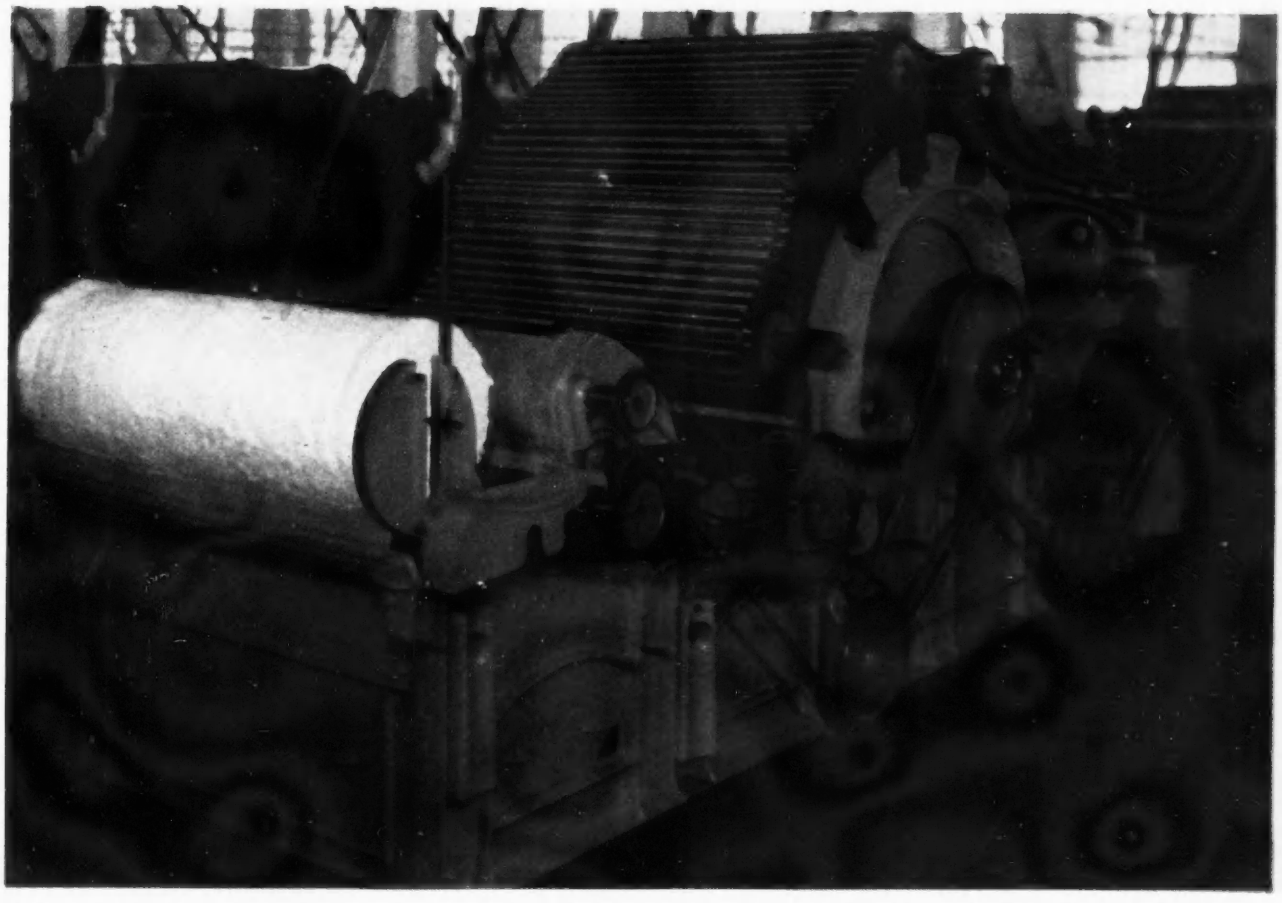
Dr. M. L. Brittain, president of Georgia Tech, and Robert W. Philip, editor of COTTON, were guests at the dinner, at which the proficiency award of *Phi Psi* textile fraternity was presented by Dr. C. A. Jones, dean of the textile school, to Robert L. Beard. This award, consisting of a pocketbook and lettercase set of ostrich leather and a certificate, is given to the member of *Phi Psi* at the school selected by a faculty committee on the basis of scholastic standing, leadership, initiative, personality, loyalty and courtesy.

### Acetate Rayon in Civilian Clothing

With increasing quantities of viscose rayon going into the manufacture of military equipment such as parachutes, tires and aerial tow targets, the supply of acetate rayon is becoming increasingly important for the manufacture of civilian clothing, Edward E. Connor, manager of acetate rayon sales for the American Viscose Corporation, stated last month. As a consequence, every effort is being made to maintain production of acetate rayon at a high level.

Production of acetate rayon yarn in 1942 amounted to 169,000,000 pounds as compared with approximately 300,000,000 pounds of viscose rayon yarn, Mr. Connor said. No marked increase in output will be possible during the current year since new manufacturing equipment cannot be obtained. War uses for acetate rayon, while small, are increasing.

Acetate rayon has recently been used for the first time in women's hosiery, Mr. Connor stated, and reports indicate that these stockings are meeting with favorable customer acceptance. Principal other uses for acetate rayon have been in women's dress goods such as sharkskins and printed, combination and tricot fabrics; high grade satin women's underwear; satin and taffeta nightgowns; suit and overcoat linings; hat linings; voiles, marquisettes and ninons for window curtains; taffeta shower curtains; ribbons and men's seamless hose.



*This card, photographed in natural color in the LaFayette (Ala.) plant of Avondale Mills, is painted in turquoise blue gloss, and the danger areas spotlighted with red gloss . . . . . .*

# THE EYES HAVE IT


## By Robert W. Philip

**Editor of "Cotton (Serving the Textile Industries)"**


NATURE, the master painter, uses color, that magic art, to its fullest advantage to brighten and enliven herself; and color has contributed much to keep our lives from being drab and monotonous. But the use of color in industry has not been fully appreciated, nor its possibilities fully understood.

It has been only within the past few years that, properly applied, color can be used in industrial plants to improve seeing, reduce accidents, improve worker morale, aid in good housekeeping, and relieve eye fatigue.

A technique known as "Three Dimensional Seeing", which makes scientific use of color in the painting of plant interiors and equipment, has been developed during the past few years*. The demands of war for higher speed production, less waste and reduced accidents proved a stimulus for the development, and its practical use, with proven results, has been made in a wide variety of industrial plants. Its possibilities have been demonstrated in a number of textile plants, and the accompanying natural-color photographs, made in the LaFayette (Ala.) plant of Avondale Mills, illustrate vividly some of the applications in this industry. Avondale Mills have applied the idea widely throughout their group of 11 plants. Other concerns that have adopted it in varying degree include the Pepperell Manufacturing Company, Opelika, Ala.; U. S. Rubber Co., Winnsboro, S. C.; Judson Mills, Greenville, S. C.; Callaway Mills, LaGrange, Ga.; Bossong Hosiery Mills, Asheboro, N. C.; West Point Mfg. Co., at Lanett, Fairfax and Langdale, Ala.; Newnan (Ga.) Cotton Mills; The Dixie Cotton Mills, LaGrange, Ga.; and the Excelsior Mills, Union, S. C.

The application of the idea has reached a point where it is not so

(*) "Three-Dimensional Seeing" is the apt name given to a new science in the use of painting of plant interiors and equipment. It was developed by the E. I. du Pont de Nemours & Company, in collaboration with the lighting director of the Philadelphia Electric Company, in painstaking research on the aid of vision by the right use and combinations of colors and light. It was first announced at the 35th annual convention of the Illuminating Engineering Society in Atlanta in September 1941.

much a popular or novel idea as a revolutionary trend, and there seems no reason why its progress in the textile field should not be rapid.

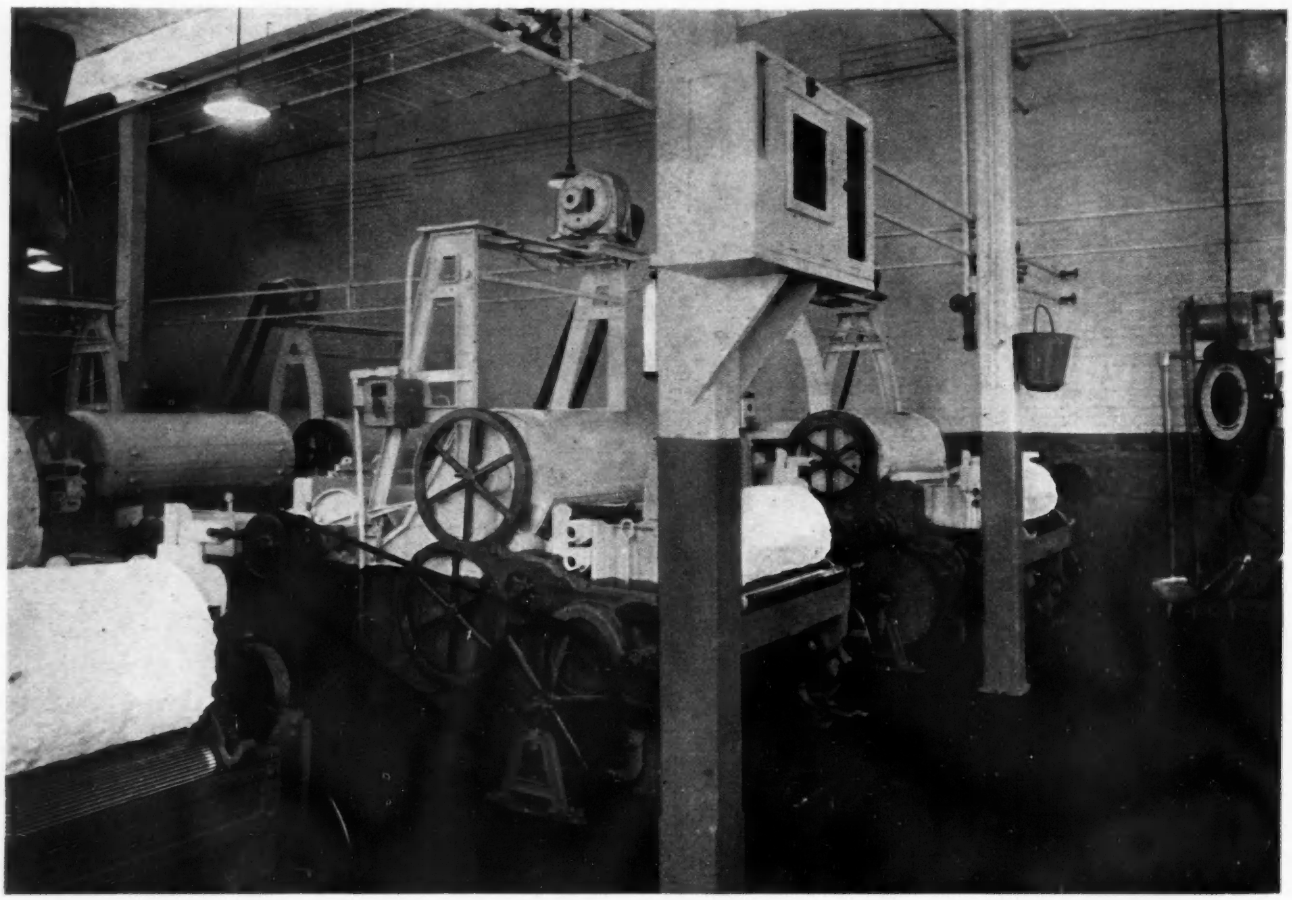
What, precisely, is "Three Dimensional Seeing", and what can it do for a mill? The flat statement that seeing conditions for workers can be improved as much as 100 per cent in the average factory was made by an authority at a meeting of illuminating engineers in St. Louis last September. This statement is all the more astounding when it is noted that such an advance toward perfect visibility can be accomplished without altering existing lighting facilities or increasing light consumption.

Back of this startling assertion were several years of work by color technicians and illuminating engineers in the use of paint colors with much higher reflecting quality than was previously thought practical on ceilings, walls, floors and machinery. By making the entire interior a giant light reflector, the utilization of light rays increases greatly. If light rays are not allowed to be absorbed by dark colors, they will be reflected back from ceilings, walls, machines and floors continuously.

Lighting and color experts selected a factory room as a "guinea pig" to study this "lost light" problem. According to accepted procedure, there was nothing particularly wrong with the room, even though the white ceilings and side walls (with gray dado) had lost much of the original whiteness and reflection value. The floor was dark and discolored, with machinery in the traditional dark colors.

It was found that only one-fourth of the light given out by the lamps reached the working level, and there was a light utilization coefficient of only 27 per cent. The researchers conducted a series of experiments in color and light to try to raise this figure. The ceiling was repainted white. The side walls were re-finished with a light green tint, and the machinery was repainted in brighter, more cheerful colors that were easier on the eyes —and, finally, the dark floor was re-coated with a neutral gray floor enamel. As a result, the reflection factor was raised progressively with each color change, with a final increase to 70 per cent for the entire room. The coefficient of light utilization was brought up to 55 per cent. This was achieved without installing additional lighting equipment.

It is apparent that only by the use of interior finishes having a very high reflecting value (60 per cent or higher) can a maximum utilization of light be attained. This applies to floors and machinery, as well as ceilings and side walls. Also, adequate contrast for efficient and comfortable vision must be obtained through more of a contrast



*The picker room at the LaFayette (Ala.) plant of Avondale Mills is finished in a sea green and jade green color combination. The dado is jade green gloss; the upper sidewalls are semi-gloss sea green, and the ceiling in white gloss. The fire equipment is identified in red, the switch boxes in light gray enamel. The lower portion of the pickers is finished in jade green gloss; the upper portion in spotlight green gloss. The danger areas on the pickers are identified by red gloss . . . . . .*

*Light blue combinations are used in the winder room at LaFayette. The dado is turquoise blue gloss; the upper sidewalls are semi-gloss capri blue, and the ceiling white gloss. The winder is finished in turquoise blue gloss; the traveling overhead cleaner in a high visibility yellow. The cleaner tracks are finished in light gray enamel gloss . . . . . .*

in "hue" than in "brightness". This applies to every surface that comes within the normal line of vision.

Machines must not be overlooked in any light-salvage program, for the average machine in the average factory absorbs 94 per cent of the illumination thrown upon it, reflecting only 6 per cent.

White—with a reflecting factor of 90 per cent—has been found both experimentally and in actual use to be the most satisfactory ceiling finish. It reflects a maximum amount of light from natural or artificial sources. Because the ceiling represents the most important light reflecting surface of any industrial interior, and is not continuously in the line of vision of the employee, it should be finished with a paint with extremely high reflection power.

Wall areas from the dado to the ceiling call for specially designed hues. Color tones providing a cool color of high light-reflecting qualities and reducing severe brightness contrasts are used on these areas.

The dado color may be darker in shade but should provide a complementary contrast to the upper wall color.

Accident hazards are identified strikingly in bright red—as a supplement to mechanical safeguards, in revolving pulleys and wheels, fire-fighting equipment, etc.—in fact, anywhere to stimulate impulsive preventive action.

A high visibility yellow is used to identify objects that need to stand out—on moving equipment that must be avoided by the employee, such as the overhead cleaner in the winder picture. Electric trucks and boxes moved through the mill should also be painted in this color.

Controls and starter handles are painted in either red or a high visibility yellow to afford quick vision to the employee, thus eliminating groping in starting and stopping machinery.

The colors selected for upper walls, dadoes and machinery should be essentially "cool" colors, to create the illusion of coolness, which represents a psychological advantage.

In many mills, a well-designed lighting system is robbed of its efficiency by dull, dingy ceilings, walls and floors.

Many color combinations may be used to yield dividends in terms of better light, better sight, and better morale. The combinations used by the Avondale Mills in the LaFayette plant are described along with each picture. Hugh M. Comer, executive vice-president of Avondale, found the results of their preliminary program so satisfactory that more extensive applications are being made in other units in the group. A blue-green wall combination, in the Callaway Mills, LaGrange, Ga., serves its purpose as a mild psychological stimulus to the employees.

It should be emphasized that, although color on industrial interior

surfaces serves the primary function of boosting the utilization of established illumination sources to improve seeing conditions with consequent improvement in employee efficiency and morale, there are other factors that should be taken into consideration before deciding upon a color combination. In other words, scientific industrial interior painting is not merely a matter of selecting bright colors. The hues should be chosen also to provide color correction for varying conditions caused by exposure, temperature, and special manufacturing processes.

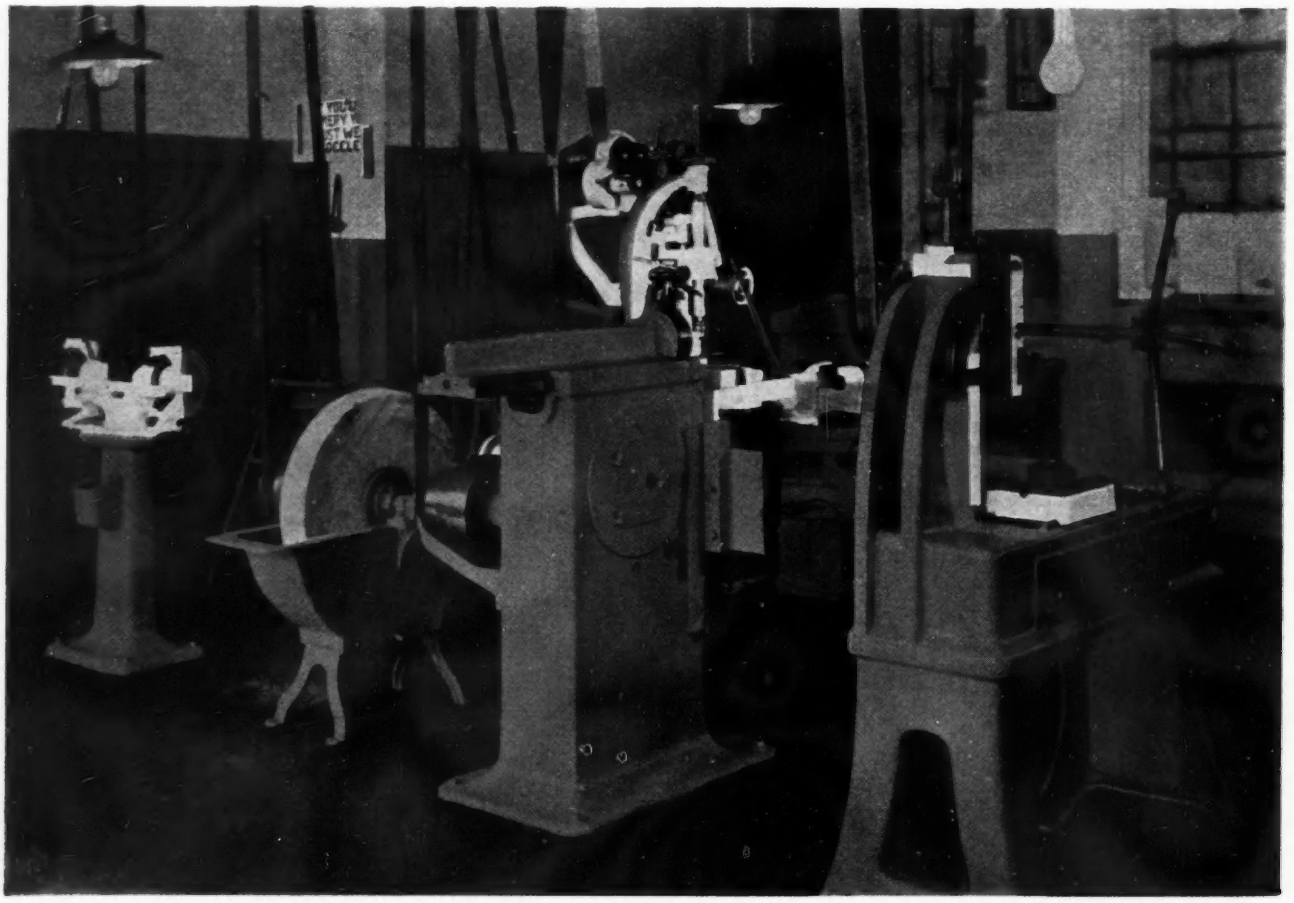
Improvement in light utilization, through the application of this new color technique, is a tangible and measurable factor which is self-evident. The advantages produced by making danger spots more visible, and by "spotting" such points as starting levers, switches, etc., are likewise obvious—as are the psychological and physical advantages when scientific knowledge of the human reaction to different colors is utilized in painting working areas. All of these factors have a definite, accepted influence on efficiency, and directly affect such matters as accident frequency. They all of course contribute to the creation of more pleasant, safer working conditions which in turn produce definite effects upon the efficiency of the employees, as well as upon the efficiency of the equipment and quality of product.

An equally vital result, though it is more difficult to measure specifically, is the effect upon employee morale and attitude that is produced by the more attractive, more cheerful and more pleasant atmosphere resulting from a scientific and judicious use of colors. People are sensitive to the surroundings in which they work. Just as the housewife's work is affected by her bright and cheery kitchen or sewing room; just as the office worker is more efficient in a modern, comfortable office—so, too, the mill employee responds to working conditions that contribute to safety and efficiency and tend to minimize accident hazards.

Another significant effect is the contribution made toward the achievement of good housekeeping in the mill, with all its beneficial results. An individual with pride of appearance will instinctively strive all the more to maintain neatness, cleanliness and order in his surroundings just as surely as he will react to conditions of an opposite character.

This is particularly important in textile plants, where so large a proportion of the employees are women, with the trend in that direction increasing under wartime conditions, for women are generally more responsive to the influence of color than are men.

Thus, in this new painting technique, we find a simple, economical answer to the "lost light" problem, and a means of improving industrial seeing conditions through better illumination, and of obtaining maximum utilization of existing lighting equipment.



*This shows a corner of the machine shop at LaFayette. The following colors are used here: dado, turquoise blue gloss; upper sidewalls, semi-gloss capri blue; ceiling, mill white gloss; body of machines, light gray gloss; spotlight area, spotlight buff gloss; handles and controls, enamel red gloss; and lockers, turquoise blue gloss.*

# Automatic Box Loom Fixing

## By R. B. Pressley (Article 1)

**THIS extremely practical and useful set of notes on automatic box loom fixing fills a long-felt need. The author prepared them for, and used them in his own work as head loomfixer at Dunean Mills, and as an instructor of loom fixing in state vocational and national defense classes under the school of vocational education at Clemson College in co-operation with the State Department of Education.**

**These notes are intended as a basis of training loom fixers in the proper way of adjusting and setting looms of the types described. They will appear in several installments, instead of all in one issue, solely due to space limitations. Accordingly, we urge each reader interested to preserve this and the succeeding installments in order that he may have a complete set of the notes for permanent reference at the conclusion of the series.—The Editor.**

### Author's Foreword

*The modern, high speed automatic box loom, running three shifts almost continuously, is a precision machine and must have all timings and settings made accurately.*

*When mills ran only one shift, with only one loom fixer to each section, perhaps any way that a loom was set, provided it did not injure the equipment or make bad cloth, would be all right. But we probably have no mills today running only one shift, so we must have loom settings so the various loom fixers on the same job will have a common basis from which to work. Otherwise they will spend all of their time tearing up what each other does.*

*The most valuable and most successful loom fixers are those who can work on any job with other good men, and all of them set the loom alike.*

*The following setting instructions are not opinions or ideas of the author, but are based on settings recommended by the loom manufacturers, and based on facts derived from ten years of loom experience on numerous constructions of cloth made under the most exacting cloth grading conditions. It would be untrue to say that a loom never has to vary from the settings, but it is unusual to have to do so.*

*I would be less than grateful if I did not express my appreciation to the loom fixers and weave room foremen of Dunean Mills for the things they have shown me about fixing looms. I wish also to thank Mr. L. R. Booker of Clemson College for instructions given in his classes and for help in arranging these notes for publication.*

R. B. PRESSLEY

The instruction in this series is for the following types of looms: Crompton and Knowles' S-3 shuttle changing loom; S-4 shuttle changing loom except mechanism of third and fourth boxes; and part of S-5 bobbin changing loom.

### Box End Picking Motion (Fig. 1 and Fig. 2)

Set pick shoe 1⅛-inch from collar.

Set back pick shaft bearing 1⅛-inch high.

Set front bearing level with back so shaft will work freely in bearings.

Set stop adjusting screw so pick ball will strike shoe ½-inch from point.

Set pick ball stand on cam shaft so ball will strike flush with inside of shoe.

Set picker stick stud in center of slot in picker foot.

Set lug with ½-inch or more clearance between power strap and inside of back of lug.

Set stroke between 8 and 9 inches, usually 8½ inches. Adjust stroke by moving picker stick stud in slot.

Loom starts picking with 7⅝-inch clearance between breast beam and reed line. This is approximately on top center. Adjust time by moving pick ball in stand or timing head gear. Pick ball should be run in center of slot if possible.

Lug should be set so sweep stick is level.

### Magazine End Picking Motion (Fig. 1 and Fig. 3)

Set pick shoe 1¼-inch from collar on pick shaft.

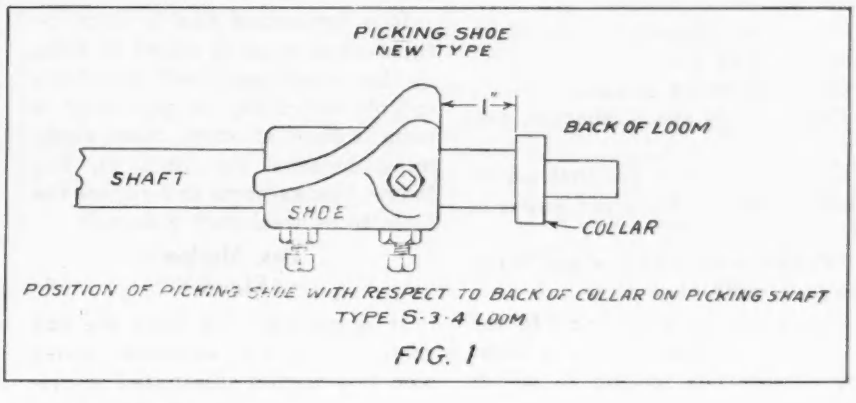
Set stroke between 8 and 9 inches, usually not less than 8¾ inches.

Because of a longer lay end on the magazine end of loom and to avoid slam offs on transfer, there must be more power on picker sticks on this end of loom.

All other settings are the same as on box end of loom.

### New Type Pick Shoe (Fig. 3)

A new type pick shoe has recently been placed on the market. This shoe is different from the old type shoe in that it is cast with the hole lower in back of shoe so that back of shoe is raised higher on the pick shaft. The back bearing can then be lowered and pick shoe set 1-inch from collar on shaft on box




POSITION OF PICKING SHOE WITH RESPECT TO BACK OF COLLAR ON PICKING SHAFT
TYPE S-3-4 LOOM

FIG. 1

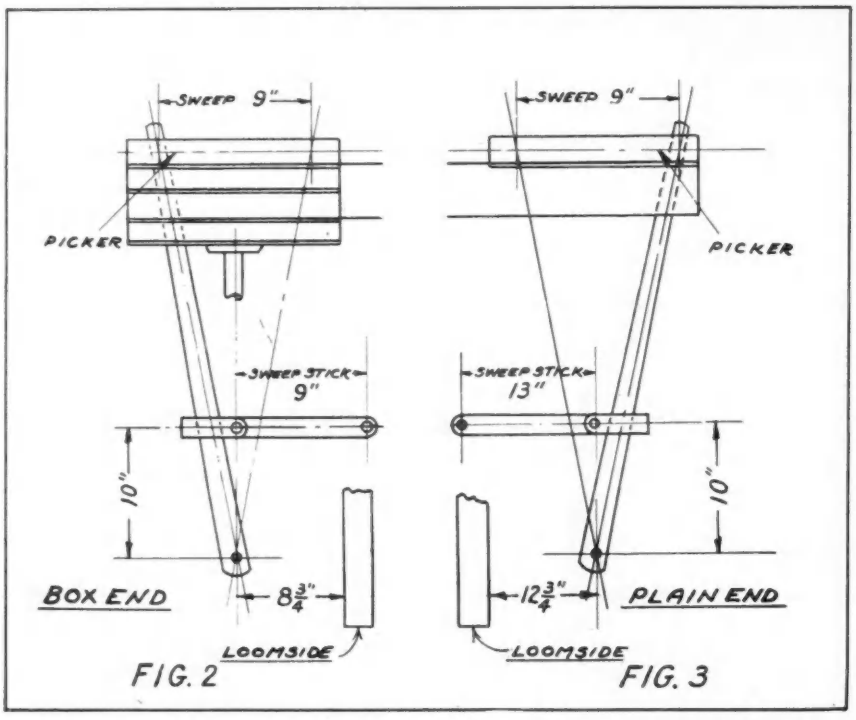


FIG. 2 FIG. 3

end and 1⅛-inch on magazine end.

This shoe gives loom a gentle pick, will not slam if set right, and is the best shoe that has been made for the S-3 type loom.

### Slam Jobs

Check pick shoes, pick balls and pick shaft levers to see if loose.

Check pick shoes to see if set right distance from collars on shafts.

Check heel and return springs to see if broken or for having too much tension.

Check picker to see if binding and parallel.

Check stroke and time of picking.

Check pick ball to see if ball is striking shoe ½-inch from point and flush with inside of shoe.

With picker stick at end of stroke, pull on stick to see if there is any lost motion or if lug is weak enough to stretch.

Check all binders to see that they are set right.

Check all check straps.

Run loom to see if shuttles are boxing.

Check friction to see that motor chokes when hand lever engages notch.

See that reed is in line and boxes are level with race plate.

Check box motion spring to see if tension is right or if it is broken. Check box motion to see if pins are loose and for lost motion. Set whirl motion to change on time.

Check pick ball to see if worn around bushing.

Put shuttle gauge on shuttles to see if they are sized to match.

Check protection motion.

Check to see if loom is throwing crooked shuttle.

Check box cell guide to see if it is binding box cell.

Check shed to see if it opens wide enough to let shuttle pass through freely.

Check key in pick ball stand to see if it is broken or bolts loose

Check crankshaft head gear to see if loose.

Check back bearing on pick shaft to see if it is high enough.

Check camshaft too see if worn or head gear loose.

If loom continues to slam after these things have been checked, pick shoe must be worn out.

It is important that a loom be fixed as soon as it starts to slam as the cause may lead to serious trouble which can be prevented if loom is fixed at once. Also, slamming loosens the nuts on the looms, breaks parts and causes the loom to be weakened generally.

### Box Motion (Fig. 4.)

It is necessary to have the box motion properly adjusted, timed and lost motion eliminated to prevent slam jobs, cut and broken filling, ends knocked out and to have a smoothly running loom.

To test box motion, the loom should be stopped with both shuttles in box end of loom, lay set 8⅝ inches from reed line to breast beam with crankshaft coming up. The breakage preventer (26) on camshaft should then be disconnected by loosening Allen set screws. Horn gear (22) is then moved so whirl (5) will turn. Then test whirl to see if there is any lost motion. If there is, take cap screw (14) out to see if spring (13) is broken or bushing (12) and steel ball (11) is gone or steel ball worn. Bushing should be in whirl motion at all times. Replace parts and tighten cap screw (14) until whirl is tight.

Test arm (15) that connects compound lever (17) and whirl for lost motion. Check compound lever itself for worn bearing. If studs or bearings are worn, they should be replaced with new studs and re-bushed bearings in arm and compound lever.

Put whirl plunger (10) in motion and turn with screw-driver. Spring should make slight clicking noise when steel ball strikes hole in cam (3) on back of whirl. Be careful not to get spring too tight.

The most common cause of trouble with the whirl motion is broken pins in the face plate (5) on front of whirl. If these pins are loose or broken, the motion will be weak and sluggish and cause the loom to slam with the shuttle in magazine end as second shuttle picks from box end. The pin that holds cam on back of whirl can usually be driven out and whirl motion replaced with a new one. When this is done, care should be taken that pin is started in large end of holes in cam and shaft as holes and pins are both tapered.

Sometimes the pin in whirl shaft is battered and whole box motion stand has to be replaced. When this is done, loom should be in position at start of check up. Whirl plunger is put in with the long side of plunger to the front, the top box must be level with the race plate. The breakage preventer (26) is then placed in line with horn gear (22) with horn gear against plunger (10). The break-

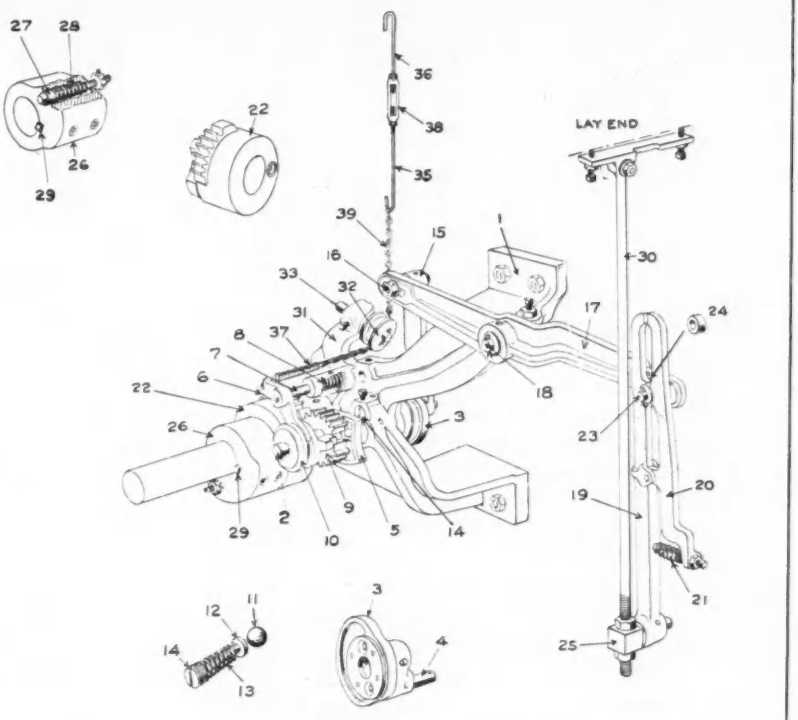



FIG. 4

age preventer is tightened with from ⅛ to 3/16-inch clearance from horn gear so that plunger in breakage preventer can become disconnected to avoid breaking whirl motion pins when boxes hang up.

Move lay to front center and set stroke arm that drives dobby head straight out to back so harness will level on front center.

Boxes will then have to be divided and lined with race plate. To divide boxes, set both compound lever studs (16 and 23), in center of slots and line top box with race plate. Turn loom over and check second box. Leave front stud (23) in center as this is only the stroke that controls the height that boxes are raised and almost never has to be moved from center of slot. To raise second box, move back stud (16) toward front of loom. Boxes can be divided by moving back stud and two nuts on bottom of box lifting rod (30).

### Box Motion Settings (Fig. 4.)

Have lay 8⅝ inches from reed line to breast beam, shuttle in box end and crankshaft coming up.

Have top box level with race plate and long end of whirl plunger (10) to front.

Have both compound lever studs (16 and 23) in center of slots.

Turn whirl over so second box is level with race plate. If box is too low, move back stud (16) toward front of loom. Use nuts on bottom box lifting rod (30) and divide boxes by continuing adjustments until boxes are both level with race plate.

Place horn gear against whirl plunger and tighten breakage preventer (26) ⅛ to 3/16-inch away from horn gear (22).

Move lay to front center and set dobby stroke arm straight back.

### New Type Box Motion

Crompton & Knowles has just completed a new type box motion which enables a loom fixer to replace all worn parts in the changing mechanism in a short time. A new frame has been made with a slot cut in the front side where the braces fork.

The whirl motion is pinned around a bearing in which the whirl shaft revolves. The bearing is an eccentric bearing on the outside built in the same shape as the crank shaft bearing. The bearing is turned in the box motion frame slot and locked into position by two cap screws.

The ball bearing wears out a bushing in the side of the bearing, whereas the old type motion wears out the box motion frame itself. When the new type whirl motion shows lost motion in the parts or the pins are broken, the two cap screws are taken out and the complete whirl motion is lifted out and replaced with a new or repaired motion. This should take less than five minutes, as no settings are required except the timing of the motion at 8⅝ inches from the reed line to the breast beam just as in the case of the old type box motion.

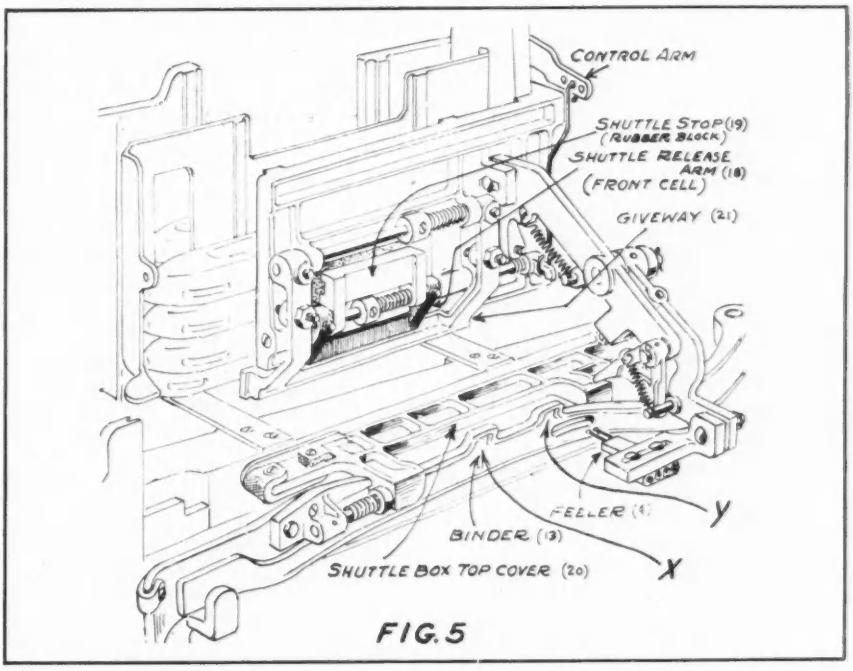



FIG. 5

### Shuttle Boxing
### (Fig. 5.)

On box end, both binders should be set to release shuttles immediately at end of stroke. Front ends of binders should not be set closer than ⅛-inch to pin. Tension on springs should be as light as possible.

On magazine end, binder should release shuttle at end of picker stick stroke. With shuttle full in box, binder should hold shuttle between upright projections on binder (X and Y).

Magazine end binder pitches slightly outward at top so that on transfer incoming shuttle can drop freely in box. Be sure that binder takes hold of full width of shuttle.

Short check strap on magazine end should not hold picker out past center of box top roller or loom will roll shuttles on transfer.

Set tension on return and heel springs as weak as possible. Do not make the mistake of running too much spring.

The check on long check straps on picker sticks should be long and gentle. Do not use a short, strong check.

### Protection Motion

Have protection rod working freely in bearings.

Set proper tension on springs.

Take out knock-off frogs and inspect to see that they are in good condition. If frogs are worn on one side, swap them to opposite ends of loom. Replace frogs with new ones if they are worn on both sides.

Take shuttle out of loom.

Pull lay toward front center and have daggers about ⅛-inch underneath frogs. Be sure that both daggers are touching frogs.

Without changing position of loom, set ⅛-inch clearance between both protection fingers and binders on each end.

Replace shuttle in loom.

Set rod stop so there will be ⅛-inch clearance between finger and binder on end of loom that binder is open the widest.

Take shuttle out of loom and test motion by pulling hand lever on several times to be sure that loom will slam to eliminate breakouts.

### Loom Lining

The ends of lay ends pitch toward front of loom 1/16-inch.

Reed cradle has backward pitch of about ⅛-inch from each end to center of cradle.

Bottoms of box cells should be covered with corduroy or some other suitable material to protect shuttles and filling.

To line boxes, tilt back ends of box cells 1/16-inch higher than front, with front level with race plate.

To line dummy box, set box 1/16-inch lower than race plate with loom on back center in transferring position.

To line reed, release all bottom adjustment screws. Line ends of reed with box backs at both bottom and top.

Run center bottom adjustment screws in until they touch reed cradle and tighten jamb nuts.

With loom being lined in this way, the shuttle will have a tendency to hug against reed and race plate, thus going through the warp without touching warp.

The time of the crossing of the harness shafts and the size of the shed is important in the weaving of various constructions of cloth.

### Causes of Shuttle Hitting Warp or Throwing Out Shuttle

Box out of line, box too low, not enough pitch.

Not enough pitch in lay end.

Picker not parallel.

Harness too low or not enough shed.

Dobby lever or jack back worn.

Too much stroke on picker stick or lug too low.

Not enough bumper on picker rod.

Pick ball not striking shoe ½-inch from point.

Spring on vibrator fingers too weak.

Loom picking too early or too late.

Reed out of line.

Reed cradle hanging up behind reed line of loom.

Harness crossing too late.

Box motion out of fix.

Box cell guide too loose or too tight.

Harness spring broken.

Race plate loose on lay.

Brass block too low at end of race plate.

**(This article will be continued in the next issue. We urge readers to retain each installment.)**

### "What the Well-Dressed Arabs Will Wear"

Lend-lease and war aid textile procurements in large volume have excited much interest as to what type fabrics should be used and how best to dye, print and finish them. An answer is given in a new bulletin by Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J., giving "Typical Shades and Patterns for the French North African Trade". Prepared from information gathered in France, the bulletin gives a comprehensive picture of the fabric construction and patterns used for many years in the closely controlled markets of Tunisia, Algiers and Morocco. Typical formulae have been given and prints wherever possible have been made to the full size of the original. Enlarging on the construction of fabrics and their finishing, a table has been prepared showing type, count, width and finish. Many manufacturers and finishers will find interest in the fact that patterns in print goods are similar in many cases to those used in America and that some shades popular in North Africa are also those of high choice in this country.

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### Rayon Production Off Slightly

United States production of rayon filament yarn and staple fiber registered a slight drop during the first quarter of 1943, as compared with the record-breaking final quarter of 1942, according to figures made public by the *Rayon Organon*, published by the Textile Economics Bureau, Inc. Output of all types of rayon aggregated 160,400,000 pounds in the first quarter of this year as compared with 162,100,000 pounds in the final quarter of 1942, and 153,900,000 pounds produced in the first quarter of last year. Production of rayon filament yarn alone amounted to 121,500,000 pounds in the first quarter of this year, of which 79,800,000 pounds were viscose-cuprammonium yarn and 41,700,000 pounds acetate yarn. Staple fiber production amounted to 38,900,000 pounds for the first quarter of 1943 as compared with 37,200,000 pounds in the last quarter of 1942 and 36,800,000 pounds in the first quarter of last year.

# Mental Attitudes in War-time


## By W. M. McLaurine

**Secretary-Treasurer, American Cotton Manufacturers Association**


AS LONG AS people can awake each day and expect to find a world somewhat similar to the conditions under which they have been, or become accustomed, their minds act normally and they take a rather placid view of life.

When something like this world-wide conflict gathers up all people out of their normal and regular routine with an earthquake convulsion, their minds become confused, their judgments bad, hence many people operate in a vastly different way because they have not been accustomed to think in this confusion.

Management and labor alike must realize the mental strains and stresses under which everyone lives today. This is a war in which all people are involved either directly or indirectly.

Sons and sweethearts, husbands and loved ones are on the fighting lines, or are slowly but surely advancing that way. Many have already made the supreme sacrifice, many have been maimed and wounded, and the end is not yet. Privations and hardships are gradually making their inroads into every home. The press and the radio tell the stories and sound the warnings. Even with the successes that we have had, there are still great prices to be paid before the victory comes.

And yet the work of the world must go on. Planes and tanks and munitions and ships and clothing and thousands of other needed articles must be made. There is no one else to make these things except those people who are left at home. They must make them or the war will be lost and all of our sacred rights and privileges will perish.

These textile products will be made when and as needed. To accomplish this, management and workers must be extremely tolerant of each other's weaknesses during these days. All people are working at high tension and under explosive pressures. We have grown exceedingly sensitive in our partially deranged thinking. Management and workers must study and apply the principles of a sane industrial relations program now as they have never before. This grief that we are enduring has come to all; no class or family is excluded or excepted.

Workers must be sympathetic with management because management has made its contribution to the armed forces, and, in addition, it feels keenly its duty and obligation to keep the flow of materials steady, even trying at times to accelerate their movement. Management does not want to be or seem unreasonable. The government calls for materials for the fighting forces and management is determined that these fighting forces shall have their supplies, insofar as textiles are concerned, when and as needed.

Management must cultivate labor more closely, must take it into its confidence and let them know its problems and pressures. It must realize that all people are human and in times of stress, all people become exceedingly human. Management must watch carefully for grievances and correct them at once. Often a worker may have a mental state almost at the breaking point and some grievance unnoticed or uncured can cause trouble.

This is a troubled world and management must do all within its power to ease the tension. Often people stand a strain only so long and then they become absentees, either through the alcoholic route, through fishing, visiting or many other ways. The nerves give way and judgment is warped. The value of their contribution to the successful winning of the war is overcome by their unhappy mental reflections.

The superintendents, the overseers, must keep very close to all of their workers. They must inspire them with confidence in their leadership. They must inspire the workers to an appreciation of the fact the textile industry is an essential industry in winning the war. The textile industry is a war plant. The people who work there are soldiers on the home front. In war time every soldier must do his duty. Absenteeism in a war plant is as bad as an absent soldier in the battle line.

In this crisis we have learned more than ever to appreciate the value of each human being. The preservation of human personality for all people is the only thing that we are struggling for. War and its waging has demoralized our thinking. The sons of management and the sons of workers fight side by side in the fox-holes of the world. The preservation of the ideals for which we are fighting is no more valuable to one man than another.

Most people are kind and patriotic when their better selves speak. This is an appeal to all to sit down in the quiet of their rest period and try to get their minds clear, then they should focus them upon the main objectives of this present period and then look down through the corridors of the future so that all can become deeply impressed with the importance of this day.

Workers and management alike need to enjoy a little calm so that they can discard much of the rubbish and debris which becloud their thinking and then when they have finally plighted their new allegiance to the cause, courage, that old American virtue, can step up with an unconquerable will to carry through to the end with nothing less than our best.

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**THIS IS the eighth in a new series in "Cotton" by Mr. McLaurine. The first appeared in the November 1942 issue, the second in the December issue, the third in the January 1943 issue, the fourth in the February issue, the fifth in the March issue, the sixth in the August issue, and the seventh in the May issue. Previously, we had presented 12 articles by him directed mainly to plant executives and supervision, as to various phases of public and industrial relations.**

**The present series is intended to provide, for the operating executive, information which it is hoped will be useful for transmitting to the employees of the plant.**

**Reprints of previous articles in either series are available.**

# Dyeing Sulphur and Developed Colors on Raw Stock Cotton

**ON PAGE 121 of the April issue of "Cotton", a mill manager asked several questions with respect to the dyeing and drying of sulphur and developed colors on raw stock cotton. He submitted several specific points as to temperature, the number of washes, etc., etc. His questions were answered by several men, and one of the replies appared on page 124 of the May issue. Others will be presented later.**

**One man used the questions as the springboard for a general and detailed discussion of the subject broadly, and because of the particularly thorough and practical manner in which he has covered it, we have detached his remarks from the "How Other Men Manage" department and are presenting them herewith as a separate article on the subject.—The Editor.**

IN DYEING any color there are numerous factors that contribute to the quality of the dyeing, such as the condition of the water used, the condition of the pumps on the dyeing machine, etc. Water for dyeing should be free of minerals, salts and hardness.

Since the machine must be loaded first, let us start with this operation.

The cotton to be dyed should be thoroughly opened and cleaned before dyeing. This is done by running the cotton through any of the several opening and cleaning units generally used for this purpose. The cotton can be loaded into the dye machine directly from the cleaning unit or it can be baled after cleaning and loaded from the bales. The machine should be loaded evenly and uniformly throughout. Care should be taken in packing the cotton around the sides of the machine and around the chains which lift the carrier from the dye kettle. This is the first requisite, since a batch which channels cannot be dyed evenly.

After the machine has been properly loaded, the cotton should be "wet out" *completely*. This can be done by boiling with plain water, or more quickly by using any one of the numerous penetrants that are available.

In selecting a penetrant the dyer should consider the result desired and the conditions under which the penetrant is to be used, rather than the speed at which a given percentage will sink a skein of natural yarn in a cylinder of plain water.

After the cotton is well wet out, it is ready to be dyed, so let us consider the preparation of the dyestuff.

### Dyeing Developed Colors

Developed colors are dyed just as direct colors. That is, they are *dissolved* in hot water and added to the dye machine at temperatures ranging from 120 to 200 degrees F., depending upon the dyestuff itself and the depth of shade. It is impossible to specify any definite temperature as different dyestuffs are and act as individuals. However, generally speaking, light to medium shades should be entered at the lower temperatures to obtain level dyeings. Care should be taken to thoroughly *dissolve* the dyestuff. The diazo dyestuffs are soluble in from 10 to 50 times their own weight of hot (180-212 degrees F.) water. The amount of water necessary for dissolving the individual colors can be found in the manufacturers shade card.

After the dyestuff is dissolved, the solution is added to the dyeing machine at the predetermined, correct temperature. If the dyestuff is entered at a temperature less than 200 degrees F., the temperature is raised to 200 degrees F. In the case of light to medium shades, when the temperature has reached 200 degrees F., from 5 to 20 per cent common salt or 10 to 30 per cent Glauber's salt may be added *slowly* and the dyeing continued until the color is exhausted; 30 minutes after salt is the general practice.

In cases of medium to heavy shades or where the dyestuff is entered at 200 degrees F., the dyestuff is circulated for 30 minutes after entering or after the temperature has reached 200 degrees F. Then from 20 to 35 per cent common salt is added, *slowly*, and dyeing continued for 30-45 minutes at 200 degrees F.

After dyeing, the cotton is washed cold until the wash water is clean. The time element here will depend on the depth of shade. The usual time required is 30 to 45 minutes.

After the cotton is thoroughly washed and both cotton and machine are cold, start circulation and diazotize (cold). In very hot weather it is advisable to add ice to the dye machine since the diazotizing bath should be from 60 to 70 degrees F. Diazotize with:

1½-3 per cent sodium nitrite; and 3-5 per cent sulfuric acid 66 degrees Baume (168 degrees Twaddle), or, 5-7½ per cent hydrochloric acid 20 degrees Baume (32 degrees Twaddle), for 30 minutes.

After diazotizing the cotton must be thoroughly washed *cold*. All traces of the diazotizing bath must be washed out before developing. This generally requires 30-40 minutes on closed type machines. After diazotizing the cotton must be developed immediately as the dyestuff in this state is very sensitive to sunlight, drying out, and contact with various metals.

The shade may be developed with 1-2 per cent beta naphthol dissolved with ½-1 per cent caustic soda (flakes); or, ½-1½ per cent meta toluylenediamine dissolved with ¼-¾ per cent soda ash. (Since this chemical is no longer available, Developer P. D., which is meta phenylenediamine, may be substituted). Or, ½-1½ per cent Developer Z (phenyl methyl pyrazalone) dissolved with ¼-¾ per cent soda ash.

The developing bath is always run cold (60 to 80 degrees F.). This bath is usually run 30 minutes. After developing the cotton is again thoroughly washed, usually for 20 to 30 minutes.

On very heavy shades a warm rinse (120-130 degrees F.) is given after the cotton has washed cold for 10 to 15 minutes. (This helps clean up the cotton.) The cotton is washed cold until clear after the warm rinse.

After this wash a salt rinse (5 per cent based on the weight of the cotton at 120-140 degrees F.) or a softener may be applied.

Since this contributor has evidently had trouble with carding, I would recommend that he use one of the softeners that require salt in their application.

The average dyeing cycle for developed colors is 5½ to 6 hours.

### Dyeing Sulphur Colors

As to sulphur colors, the importance of proper loading and wetting out of the cotton is the same with sulphur colors as with developed colors. The dissolving of sulphur colors requires much more care than diazo colors.

Generally speaking, the sulphur colors are reduced or dissolved in from 10 to 50 times their weight of *boiling* water with ½ to 2 times their own weight of sodium sulphide and sufficient soda ash to maintain the pH or alkalinity most desirable for the color or colors involved. From 10 to 30 minutes, at 200-212 degrees F., is usually sufficient time to reduce or dissolve the sulphur colors.

In closed type machine (10:1 ratio) it is not advisable to use less than 3 per cent sodium sulphide (based on the weight of the cotton, regardless of the amount of color). The dissolved dyestuff is added to the dye machine at temperatures ranging from 140 to 200 degrees F., dependent upon the depth of shade and the characteristics of the dyestuff.

The temperature is raised to 200 degrees F., and dyed for 30 minutes, after which time 10-40 per cent common salt is added *very slowly* and dyeing continued at 200 degrees F., for 30-45 minutes or until exhaustion.

Ammonium sulphate, monosodium phosphate or tetra sodium pyro phosphate are sometimes used to aid exhaustion on heavy shades.

After dyeing, the cotton is washed thoroughly (blowing the dye liquor out of the machine with compressed air is very widely practiced. This practice oxidizes the dyestuff and shortens the time required to wash the cotton). The usual practice is to wash *cold* until the water coming out of the sewer pipe is clean.

On very heavy shades it is sometimes beneficial to wash cold for 25-30 minutes and then give a hot rinse (160-180 degrees F.), and then wash cold until clean.

After thorough washing the same softening procedure as outlined for diazo colors applies on sulphur colors except the temperature may be raised to 140-160 degrees F.

*Drying.* The cotton should be extracted as well as is possible with the equipment available. In no case should cotton containing more than 50 per cent moisture be put into the dryer.

I would like to point out here that the hotter the cotton can be brought out of the dye machine and extracted, the more water can be taken out in the extraction operation.

*Dryer temperature.* I think 220 degrees F., at the entry or feed end of the dryer, with the temperature dropping to 200 degrees F. at the center and 180 degrees F. at the delivery end is sufficient heat to dry properly extracted cotton. However, the newer model dryers run up as high as 280 degrees F.

The cotton should not be dried to contain less than 7½-8 per cent moisture, and slightly higher moisture content will not cause any difficulties in the processing through the mill. The cotton coming from the dryer should be lofty and should not feel hot to the hand.

Cotton so dyed and dried will present no unusual difficulties in carding, drawing and slubbing. In spinning colored cotton, it is necessary to use *less* twist than is used on natural cotton being spun into the same counts. In the case of 16s to 22s yarn I would suggest that the mill try two teeth *less* twist than they find satisfactory for natural yarn in the same counts.

*Weaving.* I am sure the mill will find that properly dyed and dried cotton, properly spun, will weave as well as natural yarn and that they will not have any more loom stops from colored yarn than from natural yarn.

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### H. L. Werner Forms Consulting Firm

Werner Textile Consultants have been established with offices at 60 East 42nd St., New York City. The company is headed by Herbert L. Werner, formerly vice-president of the Gherzi Textile Development Co., Zurich, Switzerland, and more recently president of Textile Industry Research, Inc., New York City.

The new company will specialize in improving working methods and operating conditions in U. S. spinning and weaving mills, similar to the work that has been carried out by Mr. Werner for the past 15 years all over the world, and during the last three years in a number of well-known mills in this country. It is intended to especially emphasize controlled and preventive machine maintenance, the elimination of production bottlenecks in the preparatory departments, as well as the possible improvement of quality.

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### It Takes Time to Save Time

Maybe you've heard about the man who took hours to cut down a tree with a dull axe simply because he didn't want to take the time to sharpen the axe.

Sounds silly, doesn't it? And still, all around us jobs are being done by methods which could be improved by spending a few minutes or hours, which time might be saved over and over again by using the time-saving improvement.

It is very easy for a busy supervisor to postpone making improvements. We wait to find an hour or two to improve a certain job, and then we never seem to find that hour or two. In the meantime dozens of men-days of time are wasted simply because a method improvement is not used.

Undoubtedly, a fair share of the shortage of labor we are experiencing today could be eliminated if every supervisor in industry would just set his mind to installing the job method improvements that he already knows are possible.

Of course, it takes time to save time. But, we can't afford not to spend the necessary time to improve a method which would save many more hours than are needed to improve the method.—*"Management Information", Elliott Service Co., Inc.*

# Education Fund Announced at Georgia Mill Men's Meeting

TEXTILE manufacturers of another southern state have followed the lead of those in North Carolina in providing a means—and the money—for augmenting the facilities and personnel of the state textile school. It is well known throughout the industry that, under a movement started by W. J. Carter, president of Carter Fabrics Corp., Greensboro, the North Carolina Textile Foundation, Inc., was recently formed, with contributions from North Carolina textile executives and others, and a fund of more than $350,000 is in with practically that much more pledged, to be used exclusively for the improvement of education and research at the N. C. State Textile School at Raleigh.

At the annual convention of the Cotton Manufacturers Association of Georgia, in Atlanta, on Tuesday, May 18, W. H. Hightower, chairman of a committee to conduct a similar campaign in behalf of the A. French Textile School at the Georgia School of Technology, announced that already more than $209,000 has been subscribed, and that the goal in Georgia is $500,000. Mr. Hightower emphasized that the pledges thus far have come with very little promotion effort, and that his committee is confident the goal will be reached shortly. The organization to handle the Georgia fund is known as the Textile Education Fund, Inc.

As in the case of the North Carolina organization, the Georgia organization intends to utilize its funds exclusively for strengthening the educational and research facilities at Tech through the supplementing of established salaries, increase in personnel, and extension of equipment and facilities.

This announcement was one of the highlights of a "streamlined" one-day meeting held by the Georgia association, in lieu of its customary "annual house party" at Sea Island; the change being made to conform to the war emergency conditions. Another outstanding feature was a striking address on the affairs of the state by Ellis Arnall, the youthful governor of Georgia, who made a profound impression on his audience by his evident sincerity of purpose and ability in administering the affairs of the state government.

G. I. Parmenter, superintendent of the Goodyear Clearwater Mills at Cartersville, Ga., was elected president of the association for the coming year, succeeding Julian T. Hightower, vice-president of the Thomaston (Ga.) Cotton Mills, who was presented with a handsome silver tray and pitcher as a token of appreciation of his service in heading the organization for the past year. H. Otis Ball, treasurer of the Pepperton Cotton Mills, Jackson, Ga., was elevated from treasurer of the association to vice-president succeeding Mr. Parmenter; and A. Illges, vice-president, Swift Spinning Mills, Columbus, Ga., was named as treasurer of the association.

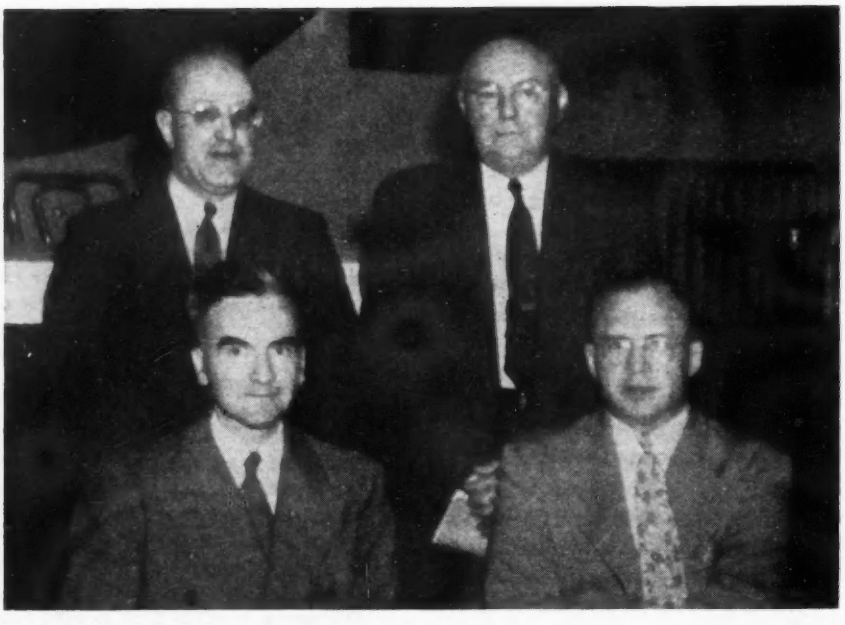
T. M. Forbes, whose position in the association was changed from secretary to executive vice-president during the past year, was re-elected to that position with a tribute for his 17 years of service for the association.

A. B. Edge, Jr., executive vice-president, Callaway Mills, LaGrange; N. Barnard Murphy, president, The Trion (Ga.) Company; George E. Glenn, president and general manager, Exposition Cotton Mills Co., Atlanta; and J. M. Cheatham, of Dundee Mills, Inc., Griffin, were elected to three year terms on the board of directors. John F. Fowler, president, E-Z Mills of Georgia, Cartersville, Ga., was placed on the board to fill the unexpired term of Mr. Illges.

Retiring President Hightower delivered a brief report to the association on the activities of the organization during the past year. Mr. Forbes reviewed the activities of the association office in more detail, and reports were heard from the cotton committee, the traffic committee and R. L. Murphy, who was engaged as traffic manager of the Georgia-Alabama Textile Traffic Association during the past year. John H. Cheatham made the presentation of the gift to Mr. Hightower; George P. Swift reported as chairman of the nominating committee, and Robert O. Arnold for the resolutions committee.

Although the convention was devoid of the leisurely program and recreation of its usual meetings at Sea Island, which have become a popular event for all concerned, the Atlanta meeting was well attended, more than 200 being present. It was efficiently and effectively operated, being compressed into one session that began with luncheon and was concluded at 4:15 P.M.

Preceding the luncheon, the association was host at a brief reception, and after the meeting, R. Clyde Williams, executive vice-president of the First National Bank, Atlanta, and his associates, entertained the delegates at an enjoyable cocktail party at the Capital City Club.



*The officers of the Cotton Manufacturers Association of Georgia. Back row, left, Guy I. Parmenter, of Goodyear Clearwater Mills, Cartersville, newly-elected president of the association; and, right, H. O. Ball, of Pepperton Cotton Mills, Jackson, vice-president. Front row, left, A. Illges, vice-president, Swift Spinning Mills, Columbus, elected treasurer of the association; and, right, Theo. M. Forbes, executive vice-president of the association*

# Carding-Spinning Discussion by Mail Held by Georgia Group

A "MEETING BY MAIL" discussing questions on carding and spinning practice was conducted by the Textile Operating Executives of Georgia this spring, in lieu of the usual round-table discussion meeting on these subjects normally held by this organization in March. In view of the wartime emergency as to transportation, etc., and the need for mill men to stay on their jobs, the executive board of the organization, composed of the superintendents and department heads of the Georgia mills, decided not to attempt the customary March meeting. Wishing to hold the organization together and continue its service to the mills, however, the questionnaire that would have been discussed at the March meeting was submitted to the members, and 20 Georgia mills submitted written answers, which were digested by a special committee in Atlanta. This digest of the discussions is presented herewith, and the executive board feels that as a wartime substitute for a meeting, this report presents some extremely useful experiences and ideas that any mill can study with interest and profit.

The following is a report of the answers received. Each mill answering has been assigned a number, and that number is used to identify that mill's answer in each case. In other words, some mills did not answer all questions, and we have retained the number assigned to each mill, regardless of this, so that the answer shown as "Mill No. 3" in the case of one question, for example, comes from the same mill that is identified as "Mill No. 3" in answer to other questions. In this way, it is possible to retain the identity of each mill throughout and thus relate its answers to any one question to its answer in another case. If a mill's number does not appear with the answers to a question, this means that mill did not answer that particular question.

It was perfectly natural that in many instances, there would be similar or even identical replies from several mills. To save space, and avoid unnecessary duplication, where two or more answers were virtually the same, we have reproduced one answer representing that particular point of view and experience, but are indicating the other mills that agree substantially with the answer quoted, adding from these other answers any supplementary information not given in the one quoted.

### Types of Card Stripper

The first carding question was, "What type of card stripper do you prefer? Why? How often do you strip?"

Mill No. 4 said, "We use and prefer the vacuum stripper because of the possibility of injury to the wire being practically *nil* and considerably less manpower being required to accomplish the same amount of work, as between this type and stripping with the combination brush and vacuum. The frequencies, of course, depend on the weight being put through the card and the quality of work desired. It would seem that a frequency of every 2 hours would be required to produce maximum benefits."

Mills Nos. 1, 8, 11, 12, 14 and 16 agreed substantially with this reply.

Mill No. 3 said, "We use the air stripper and strip every 2 hours to get the benefit of both the roll and air. The roll gives the wire a burnishing effect and there are no dangerous parts exposed to the operator and each card has its own roller and requires less adjustment."

Mill No. 5 said, "We prefer some type of stripper with a revolving brush because it scratches out the motes and foreign matter that the vacuum system doesn't get. We strip our cards every 4 hours." Mills Nos. 2, 6, 7, 10, 17, and 20 agreed substantially with this reply.

Mill No. 9 said, "We use the Parks-Cramer stripping system, and strip 3 times every 8 hours. We would prefer the Abington system except for the lowered price of strips resulting."

Mill No. 15: "We prefer the portable vacuum card stripper which has practically the same advantages as the regular vacuum stripping system. It is used in the same manner as the ordinary stripping roll, that is, the wire roll is still used but is covered with a metal hood. Most of the lint and dust raised by the stripping roll is drawn by vacuum through the flexible tube to a special container provided for this purpose. To use the vacuum and roller together, the cylinders are cleaner, the motes and burrs are removed from the wire, and all the lint and dust are removed from the air. We strip every 4 hours and think this type stripper is best because it removes the lint and dust from the air, cleans the cylinders better, and is much cheaper in installation cost." Mill No. 13 expressed the same opinions.

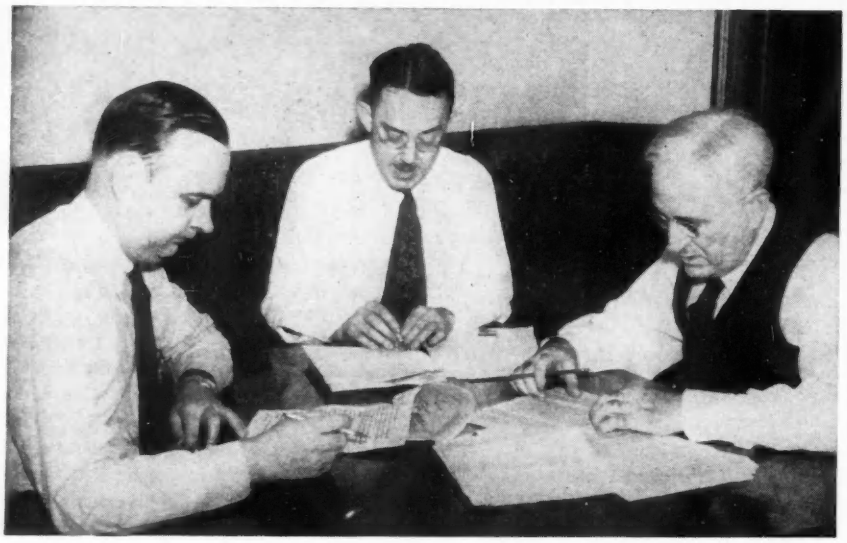
Mill No. 18 reported, "We prefer the combination roll and vacuum stripper. It gives efficient cleaning of clothing, with complete removal of stripping waste from the card room. On Middling 1-inch cotton we strip every 4 hours."

### Dividing Work on Cards

The second carding question asked, "Would you prefer having one operator perform all operations concerning the running of the card, or not? Why? Give your procedure in detail."

Mill No. 1 said, "Due to a shortage of men for running cards, we have divided the work on cards so women run all fronts, doing all doffing and cleaning around the doffer, and push the cans up to the drawing, sweeping the floor around the fronts. The men who run the backs haul their laps from the picker room, hang and lay laps, clean backs and sides, take out fly, and sweep the back alleys. A front job and a back job each covers twice as many cards as were formerly handled complete by one hand, so that under this procedure we use the same number of hands. We like this new set-up equally as well as the old." Mills Nos. 2, 12, and 18 reported similar practice. Mill No. 12 said, "With this arrangement the hands never have to lay laps when they should be doffing, or vice-versa." Mill No. 18 said, "An operative can be trained to do one job more efficiently than two or more jobs."

Mill No. 4 said, "We prefer having one operator perform all operations concerning the running of the cards, that is, creeling in full laps, brushing down, and doffing full cans. We prefer this primarily because there is no divided responsibility and we question whether there is anything to be gained



**George E. Glenn, Jr.** (left), president and general manager of the Exposition Cotton Mills Co., Atlanta, Ga., and **Ernest H. Rogers** (right), agent of the Fulton Bag & Cotton Mills, Atlanta, Ga., assisted **Robert W. Philip** (center), secretary-treasurer of Textile Operating Executives of Georgia, in compiling and digesting the answers of 20 Georgia mills to the 20 questions on carding and spinning submitted in the association's meeting-by-mail, reported here. Mr. Glenn and Mr. Rogers are past general chairmen of the organization, and were assigned this task by **J. H. Daughdrill,** vice-president in charge of manufacturing, Callaway Mills, LaGrange, Ga., current general chairman.

**Julian M. Longley,** general manager, The American Thread Company, Dalton, Ga., is vice general chairman of the organization. The executive committee consists of seven Georgia operating executives. The term of **Floyd B. Watson,** superintendent, Griffin Mill Division of Thomaston Cotton Mills, which expired this spring, was extended by the executive board, in view of the fact that no meeting was held this spring at which a successor might be named by the organization.

by having two workers operating the same cards." Mills Nos. 3, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17 and 20 concurred in this view.

### Higher Speeds on Cards

The third carding question read, "What is the maximum speed that you have operated the card cylinder with practical results? Has any difficulty been experienced, at the higher speed, with cylinder bearings or doffer combs? In increasing the pounds per hour, which method is more desirable: speed entire card from cylinder or only change doffer speed? Why? If you increase the cylinder and licker-in speed, and hold the doffer speed the same, would you remove more trash and neps, particularly the neps? What is the difference in maintenance cost between running cards at normal speed and those on higher speeds? How long will card clothing last on each?"

"We have been operating our card cylinder speeds at 180 r.p.m. for the past 20 years," reported Mill No. 1. "We have experimented with an increase to 205 r.p.m. from the quality angle and did not operate at this speed long enough to check mechanical features of the change. From the quality viewpoint, our tests showed a decrease in waste, decrease in neps per square inch, and an increase in yarn and cloth breaking strength. All of our tests indicate that an increase in over-all card speed within reasonable limits is the best way to increase production. A 20 per cent increase in doffer speed usually results in an increase in neps per square inch, whereas a 20 per cent increase (within reasonable limits) in over-all speed does not materially affect the nep count. All tests indicate that you would remove more trash and neps. We are unable to answer the question as to the length of card clothing life." Mill No. 2 said, "We run our cards at 200 r.p.m. We had to put on a ½-inch larger diameter comb pulley to help eliminate breakage of combs. We achieved the increased speed by speeding the entire card as this gives cleaner work. We do take out more trash and neps." Mill No. 12 submitted a similar report, adding that "By speeding the entire card, no actual carding is lost. Each pound of cotton will receive the same carding as it did before the cylinder was speeded."

Mill No. 6 said, "165 r.p.m. is the highest speed we have run with practical results. Higher speed would give difficulty. Increased speed of the cylinder has a tendency to stretch the clothing, making blisters. On the close settings of cylinders, these blisters will strike other parts of the card, destroying the clothing. Increased speed will not remove the neps, but will throw them from the cylinder into the fiber. Increased licker-in speed will also have a tendency to break the fibers. Increased speed will increase cost by the amount of parts or material damaged." Mill No. 8, running 170 r.p.m., said "Higher speed will certainly increase maintenance cost, especially in the life of the clothing. However, if the cards are the bottleneck in plant production, the extra cost will be offset by increased production." Mill No. 9, reporting best results at 180 r.p.m., said, "We ran 15 cards several months at 200 r.p.m., and had to go back to 180 because the higher speed loosened the clothing." Mill No. 11, running satisfactorily at 183 r.p.m. on the cylinder, said, "We got a cleaner web by speeding the cylinder 10 per cent than by merely speeding the doffer. We got less trash and fewer neps. Our maintenance cost has not increased." Mill No. 14, running 170 r.p.m., said at a higher speed (181) they had had trouble with the cylinder fillets flying up and flats being broken."

Mill No. 20 runs at 184 r.p.m. with no difficulty. They increased the entire card. "Our tests indicate that if the cylinder and licker-in speeds are increased and the doffer speed remains the same, more neps would be made because more neps are thrown from the cylinder to the doffer."

### Lap Weight—Card Draft

"What results are obtained by increasing the weight per yard of the lap and increasing the draft on the card in the same proportion?", was the fourth question on carding.

"If the weight per yard of the lap is increased, the speed of the front calender section of the pickers can be proportionately decreased," said Mill No. 12. "This will reduce the strain on the calender driving gears, reducing the amount of breakdowns on the front of the pickers. The feed roll of the card can and will hold a heavy lap better than it will a light lap. To keep the feed roll from dropping down on the feed plate when there is no lap between them or no lap on the card, the feed roll bearings are adjusted so there will be a clearance of .005 inch between the feed roll and the feed plate. The feed roll journals and feed roll bearings do wear; in this case you add the wear of the feed roll journals and bearings to the .005 inch. To find how thick the lap must be before any weight except the feed roll itself is brought to bear on the lap to hold it while the licker-in teeth are passing through it, for the sake of illustration we will assume that a 16-ounce lap when the proper feed roll pressure is on it will measure ⅛-inch in thickness. From this it should be obvious that the feed roll can and will hold a heavier lap better than a light one. The licker-in will do a better job of cleaning the cotton when the lap is properly held by the feed roll, and, too, it has a better chance to do this

with a heavier lap because it is fed more slowly." Mill No. 5 said, "We increased our card lap from 12½ to 14½ ounces and increased our sliver from 56-grain to 60-grain in order to increase our production on the pickers and cards. No difficulty was experienced on this change." Mill No. 3 reported similarly.

Mill No. 20 said, "Our laps weigh approximately 15 ounces per yard with 50 yards per lap, which is about as large as is practicable. Any increase in yard weight would, therefore, mean a reduction in total yards; and therefore we would gain nothing. As for increasing tensile strength and cleanliness due to the increased draft, we tried an 18-ounce lap and the test showed no improvement over our regular 15-ounce lap." Mill No. 6 concurred.

Mill No. 15 reported that, "Increasing the weight per yard of the lap and drafting more did not give as good results as a lighter lap with the same draft. We were running a 16-ounce lap making a 65-grain sliver and changed the lap to 14½-ounce on the same grain sliver. On the 16-ounce lap we had more uneven work, more cards mashed from jerk-ins and more trash in the web." Mills Nos. 14 and 17 reported likewise.

Mill No. 4 said to increase the weight and draft "will result in more trash being taken out if the licker-in is speeded up, but if the speed is in excess of 450 r.p.m., the extra loss of fibers would offset any benefits derived from increased lap weight."

### Doffer Speed While Grinding

The fifth carding question was, "What speed is more desirable for the doffer while it is being ground—high or low? State type of grinding roll."

**Mill No. 15 answered:**

"Low speed is best for grinding doffers, although new cards and cards that have good tight fillet can be ground with high speed. High speed is bad on the bearings and if not checked very closely while grinding at high speed the bearings will get hot. Doffers in good condition will get sharp at low speed by the time the cylinder gets sharp unless the wire has been faced or mashed. In the case of a mashed or faced doffer, high speed will grind out or level up the doffer quicker than low speed. I would not recommend high speed grinding for doffers as a whole. Some cards have old clothing that has become loose and high speed makes this old clothing crawl. Some wire on cards has a higher temper than others and high speed will heat this wire quicker, causing it to break out. We use the single wheel traverse grinding roll and grind with low speed." Mills Nos. 1, 15 and 17 likewise reported low speed.

Advocates of the high grinding speed were represented by Mill No. 7, who said, "We operate our doffers at increased speed while grinding as we feel that the grinding roll comes in contact with more wires per traverse. Our doffers operate at approximately 250 r.p.m. while grinding. We use the traverse grinding roll." Others reporting high grinding speeds were Mills Nos. 2, 4, 6, 8, 9, 11, 12, 18 and 20. All reported traverse grinders. Mill No. 4 explained that, "we operate at high speed because we use a solid rock grinder which is liable to hook the wires if ground at slow speed. With light weight grinding rolls, it is a matter of personal choice." Mills Nos. 5, 10, and 13 said they could tell no difference in the result between high and low speeds.

### Reversing Direction of Coiler and Cans on Drawing

The sixth carding question was, "If the coiler on drawing is now running in a clockwise direction and the can table is running counter-clockwise, and you change these directions so that both the cans and the coiler run clockwise, what will be the result, and what advantage, if any?"

"The primary benefit of running the can bottom and the tube gear in the same direction is that it cuts down the possibility of chafing the sliver in the can after the can starts to fill up," said Mill No. 4. "Otherwise, there is in our opinion no difference."

"By reversing the can tables we get from one to two pounds more drawing in the cans and it seems to be laid more evenly and comes out of the can better," said Mill No. 14. "But we have trouble making the cans fill up good, with the can tables level; therefore, they have to be tilted forward or backward." Mill No. 9 said the change "would get more drawing in the can and it would lay smoother," but Mill No. 15 ran a test and found that "the cans were not as smooth; also the cans had two pounds less drawing per can and the tops were easier to fall off after doffing."

### Changing the Tube Gear

"What change or alteration have you made in the tube gear for the purpose of increasing the amount of sliver per can?", was the seventh question under carding.

"We have experimented on one drawing frame by using a tube gear with a smaller hole and by slowing down the speed of the turn-table," reported Mill No. 5. "We found we were able to put more drawing sliver in the can and liked the results of this experiment." Mill No. 13 put metal inserts in the tube gear on cards and got about two pounds more sliver per can. Mill No. 16 did likewise, reporting more stock in the can and less tangled draw-

Normally, at the meetings of the Textile Operating Executives of Georgia, attendance prizes are awarded, drawn by lot. Since no meeting was held this spring, the executive board voted to award prizes to two of the mills participating in the meeting-by-mail, which substituted for the usual meeting. Slips carrying the names of the 20 mills answering the questionnaire were put face downward on a table, and **Miss Quillene Lowe**, of Fulton Bag and Cotton Mills, was asked to select two of the slips. The winners were the **Palmetto Cotton Mills** and the **Lanett Mill Division** of the **West Point Mfg. Co.** A $25.00 United States War Bond has been sent to each of these plants. Miss Lowe is shown here picking the winning slips, with **Robert W. Philip, Ernest H. Rogers**, and **George E. Glenn, Jr.**, looking on.

Two names were similarly selected from slips carrying the names of the associate members of the organization. **Robert P. Saunders**, of Minneapolis Honeywell Co., and **C. M. Stodghill**, of Stodghill & Co., Atlanta, were the lucky ones, and $5.00 in war savings stamps were sent to each of them.

ing sliver in the bottom of the can.

Mills Nos. 6 and 9 reported no advantage in changing. Mill No. 2 said, "We changed the coiler tube to 1-inch diameter hole and slowed the card down about 15 per cent."

Mill No. 15 said, "We increased the amount of sliver per can on drawing frames by adding weight to the tube gear. To do this we used lead. Our tube gears have a support which extends down from the top of the tube to the center of the gear. This leaves an opening between the bottom of the tube and the bottom of the support. We took a piece of cotton tie and made a circle around the support for a form and melted the lead and poured it in this circle. This leaves the weight in the center of the gear and also prevents its moving when the gear is running. These gears varied in weight from one to two pounds; on the light gears we added more weight to make them all weigh the same.

"Before we added this weight we were getting about 14 pounds of drawing to the can. After adding the weight we are getting 17 pounds per can. Being on electric stop motion, this gives a better run-out at the slubber."

### Temperatures and Humidities on Long Draft Roving

The eighth carding question was, "What degree of temperature and percentage of relative humidity give best results with long-draft roving frames? State grade and staple of cotton, sliver, hank roving, and style of long-draft roving."

Reports of most of those answering this question have been consolidated in Table I herewith. Mill No. 4 answered, "Long-draft roving should not necessarily require higher temperature but it can be operated more effectively at a higher relative humidity due to the excessive amount of fly resulting from operating this type of machine. This applies to all staples from ⅞- to 1½-inch Middling grade, 50-grain sliver, 1.00 to 4.00 hank roving, and a six-roll type frame."

Mill No. 16 said, "We have found that with a temperature of 80 degrees on the dry bulb and 55 per cent relative humidity on our long-draft work has given us the best results. We cannot run this temperature at all times because we have found that our drawing runs best with 90-degree temperature, but there is no partition between the long-draft frames and the drawing, so we have a happy medium of these two, which is 85 degrees. We run ⅞-inch Strict Low Middling cotton, 58-grain sliver, 1.04-hank roving, on Saco-Lowell J3 10x5 long draft roving frames."

### Preventing Eyebrows on Synthetic Cots

The ninth carding question was, "Have you found a method to prevent eyebrows on synthetic card room cots?"

Mills Nos. 2, 3, 5, 6, 7, 8, 9, 12, 13, 14 and 20 all answered categorically, "No".

Mill No. 1 said, "We have found that the best thing for preventing eyebrows on synthetic cots is a roller clearer. We have very little eyebrowing for the first few weeks after buffing, but as the cots become slicker the eyebrows get worse."

Mills Nos. 4, 10 and 19 said revolving top clearers will stop all eyebrows. Mill No. 11 said, "We use cork on fly frame rolls and have no difficulty with eyebrows."

"We have reduced eyebrows on synthetic cots by about 50 per cent by changing to a finer grain," said Mill No. 15. "We also changed to a finer emery on our buffing machine, which has a tendency to leave a smoother surface on the roll."

Mill No. 16 said, "On stationary top clearers it is sometimes beneficial to paste a strip of gum paper across the front edge of the clearer cloth. This will prevent the roll from eyebrowing. It is by no means a cure, though, for it sometimes allows the waste that is packed up behind it to fall into the work." Mill No. 18 said the remedy is to keep a good smooth surface on the rolls.

### Running Piece Cans

The tenth and final carding question was, "We would like to have some discussion on methods of running piece cans that are turned up at the creel from long-draft roving frames. Please describe in detail."

Mill No. 1 reported, "We use the same weight front drawing as back drawing. Any pieces that are made are spliced, poured up, and re-run through the front drawing, *one can of pieces per delivery*, that is, one can of pieces to five cans of regular drawing." A similar practice was reported by Mills Nos. 2, 3, 7, 8, 9, 13, and 19.

Mill No. 4 said, "We prefer to take the bottoms out of the cans running out and piece them on the full can. This method requires no additional piecing and conserves both soft waste and manpower which is required if the practice of running pieces back through a process of drawing to eliminate piecing is the policy." Mills Nos. 6, 12, and 14 expressed similar opinions.

Mill No. 5 said, "First, we use a yardage counter on the finisher drawing frames in order to put as nearly as possible the same amount of drawing or number of yards in each can. We then creel the fly frame with full cans of drawing. We run the frames until the first cans run out, then we piece in a few times in order to run the cans as low as possible, creel frame, doff it and re-work waste back through the openers. On frames of not over 68 spindles we creel the frame solidly, but on frames with more spindles we creel one-half of the frame at a time."

Mill No. 15 reported, "We have two special frames to run piece cans that are turned at the slubber. This is better than to mix the drawing at the

## TABLE I—Temperatures and Humidities Reported on Long Draft Roving

| Mill No. | Temp. | Relative Humidity | Grade and Staple of Cotton | Sliver | Hank Roving | Type of Long Draft |
|---|---|---|---|---|---|---|
| 1 | 80 | 62 | 15/16" M | 65 gr. | 3.00 | Super-draft |
| 2 | 80–90 | 55 | 1" M | 55 gr. | 2.50<br>3.00<br>5.00<br>3.50 | Super-draft |
| 3 | 80 | 45 | 15/16" M | 54 gr. | 1.48 | J3 9x4½ |
| 5 | 70–75 | 60–65 | 15/16" M | 64 gr. | .83–<br>3.50 | Change-over, Super-draft |
| 6 | 85–90 | 55 | 15/16" M | 62 gr. | 1.00 | Whitin long |
| 7 | 75 | 50 | ——— | 72 gr. | .80 | Super-draft |
| 8 | 80 | 50–55 | 1 1/16" | 54 gr. | 1.40 | Whitin and Saco-Lowell |
| 11 | 70 | 50 | 15/16" M | 60 gr. | 2.60 | Whitin long |
| 12 | 85 | 55–60 | 1 1/16" | — gr. | — | ——— |
| 13 | 76 | 55 | ⅞ and 15/16" | 65 gr. | .84<br>1.00<br>1.22<br>1.50 | Interdraft |
| 14 | — | 50 | 15/16" | 50–60 gr. | 1.00 | Interdraft |
| 15 | 75 | 52 | ⅞ and 15/16" | 63 gr. | 1.00<br>.80 | Regular 10x5 one-process slubber |
| 18 | 80 | 55 | 1" M | 50 gr. | 1.60 | Whitin long |
| 20 | 85–90 | 50–55 | 15/16" M | 71 gr. | .90 & 1.80 | Inter-draft and Super-draft |

drawing frame. We have one-process drawing and when the piece cans are mixed in with card sliver, the weights are not the same. Piece cans creeled with card sliver will cause the ends to sag or part of the end to fall down on the front of the drawing frames. We changed our frames and run all the piece can from the slubber on two separate frames. To do this we added two teeth of draft so as to make the sliver from the piece frames weigh the same as the sliver from the other frames. This runs much better, with better running ends and better work."

"Our method is to run these piece cans up on several spindles at the end of a roving frame," reported Mill No. 20. "If the splices are made correctly, this method should be satisfactory."

## Discussion on Spinning

### Cleaning Spinning Frames on Six-Day Week

The first spinning question was, "What is the best schedule and method for cleaning spinning frames running 144 hours per week? State cotton staple and grade, and number of yarn." This question was intended to bring out cleaning practice other than routine cleaning of frames, etc., during operation.

Mill No. 1 said, "On 21s white warp yarn made from 15/16-inch Middling cotton, drafted from 1.78-hank roving, operating 144 hours per week—blow down overhead twice each week on Tuesdays and Fridays. We do our overhead cleaning on the first shift, stopping frames in blocks of 30 with two men blowing. We lose about 12 minutes running time for this operation.

"We blow frames one time each week on Saturdays, second shift. We use three blow-off men and stop frames in blocks of 12. This means two frames in front of each blow-off man and one frame behind each blow-off man stopped at one time. We use extra hands for starting and stopping frames. We lose about 15 minutes per frame in this operation. Our blow-off man uses ⅛-inch nozzle at 80 pounds pressure. We do not use hand valves at the nozzle.

"In blowing off frames on first trip up side, blow head ends, thread boards, separators and ring rail. On trip back up same side, take base rails and rockers. Then move to other side of frame, blowing motors. On first trip up the opposite side, blow thread board, separators and ring rail. On return trip, blow idlers, base rail and rocker shafts. All of this work is done under the supervision of the section man. We use one sweeper to each blow-off man and average removing about two pounds of waste per frame.'

Mill No. 4: "If the question of that type of cleaning which must be done other than operating hours is intended, we have such cleaning done on Sunday."

"It is our practice to blow off frames thoroughly once each 24 hours by stopping 8 frames at a time," said Mill No. 7. "After the frames are blown off an employee is sent around to pick off all gouts and other defects before starting up the frames. We blow down overhead once each 8 hours with frames operating. We run 8s, 10s and 12s colored yarn."

"Frames should be cleaned thoroughly once a week after being stopped off," said Mill No. 6.

"We clean our spinning frames with an air hose on week-ends during shutdown periods," said Mill No. 8. "We have the spinner's cleaning schedule divided so that each spinner will have one-third of the cleaning to do on her particular job each shift. In this way each one has the same amount of cleaning, such as picking top rollers, steel rolls, brushing rails and other general cleaning. We run 1 1/16-inch cotton, 31s warp and 40s filling."

Mill No. 16 said, "We have found in operating a schedule of 144 hours per week, it is best to lay out a daily cleaning schedule for the spinners and doffers, and, if compressed air is available, to blow off the frames at the end of the week. We use ⅞-inch staple cotton, Strict Low Middling, and spin 5s to 19s yarn."

### Effect of Overhead Cleaners on Ring Life

"Does an overhead cleaning system affect ring life?", asked the second spinning question. "If so, how?"

One school of thought was represented by Mill No. 2: "Overhead cleaners do affect the life of spinning rings. The air from overhead cleaners blows the dust off the creels and roller beams down on the ring rails where we think some of it adheres to the ring. This dust, in our estimation, acts as an abrasive and shortens the life of the rings." Mills Nos. 6, 8, 17, and 20 expressed similar opinions.

On the other side, Mill No. 7 said, "We do not believe that overhead cleaning will affect spinning rings," with which Mills Nos. 12 and 15 agreed.

Mill No. 18 said, "Yes. The overhead cleaner does affect ring life because it prevents accumulation of waste on the ring, thus increasing the life of the ring."

### Straightening Spindles

"Is it advisable to straighten spindles periodically?", was the third spinning question. "If so, how often? And please describe the device used in doing this, and what type spindle you have. Do you put them back in the same bolsters?"

Mills Nos. 2, 4, 7, 16 and 20 all recommended sending crooked spindles back to the manufacturer for straightening. Mill No. 5 does it when overhauling once a year, as do Mills Nos. 3, 9, 13 and 14. Mill No. 6 does it every six months; Mill No. 17 about every 8 months.

Mill No. 8 reported, "Our overhauler goes over every frame in the mill at least once in 12 months and plumbs all spindles and straightens any bent ones. We have a homemade device for straightening McMullen spindles. This device is made of cast iron 18x 14x3 inches. On top of the piece of casting we have two v-blocks 2½ inches high which are far enough apart to hold the ends of the spindle so that it can be turned easily. We have a dial indicator mechanism which rests on the spindle and indicates the alignment of the spindle while turning. When a high place comes up, we correct this with a heavy pressure lever mounted on a rod on back of a cast-iron block."

Mills Nos. 4, 5, 9, 14 and 15 say they put spindles back in the same bolsters when practicable. Mills Nos. 2 and 13 do not put them back in the same bolsters. Mill No. 20 said, "New spindles should be put in new bolsters."

Spinning Question No. 4 was, "Please give your experience with synthetic separators on spinning frames." None of those replying reported experience with this type of separator.

### Types of Spinning Rings

"What is your experience and preference as to curved-web, v-web, and straight-web rings; also with rings with a flange at an angle to the horizontal?" This was the fifth spinning question.

"We have been using a curved-web ring approximately 7 years, and think it is the best ring used on spinning to date," reported Mill No. 7. Mills Nos. 12 and 13 reported similarly. Mills Nos. 15 and 16 prefer straight-web rings. Mill No. 17 said the v-web is best because it lasts longer and can be turned over. The others indicated experiments but no conclusive opinions as yet on curved- and v-web rings.

### Travelers Coming Off after Oiling

"Why do travelers come off after oiling spindles?", was the sixth spinning question.

Mill No. 4 said, "If the spindles are properly oiled, the travelers don't come off," an opinion concurred in by Mills Nos. 2, 7, and 12. Mill No. 20 said,

"After spindles are oiled there is a fine spray of oil thrown off. The oil will cause lint to settle very quickly; and it is picked up by the travelers, weighting them down so that they are soon worn out." Mills Nos. 6, 11, and 13 concurred.

Mill No. 16 said, "This trouble can be traced to one of four causes: Rings are worn. Travelers are not of the correct circle. Pin cleaners are not set correctly. A high-grade spindle oil is not being used. It is self-evident why the first three would give trouble. The fourth is perhaps the main reason and also perhaps the least suspected. If a low grade oil is used, travelers are almost certain to come off, because all such oils contain non-lubricating substances that collect on the rings and give the travelers a 'drag'. We firmly believe in using a high-grade spindle oil."

### Synthetic Long-Draft Aprons

The seventh spinning question asked, "How do synthetic long-draft aprons compare with leather in length of life? State type of long draft and what type of apron?"

"We have Saco-Lowell Roth long draft and have not had much success with synthetic aprons," said Mill No. 1. "At present we are getting a little better than three years' life from our leather aprons on 21s yarn operating 144 hours per week. The best life we have been able to obtain from any synthetic apron on this work is three to four months. Our synthetic aprons have an inclination to ride, that is, they won't stay down. This causes chokes between the middle and back rolls and consequent pinching of the apron by the front roll. The synthetic apron turns up on the edges, stretches laterally, and wears in the middle. It also tends to run crooked especially on coarse work where heavy roving is used and where there is a high traverse speed. The synthetic apron causes more lint accumulation on the top roll than does leather."

Mill No. 16, using Saco-Lowell long draft, says, "The life of synthetic aprons depends largely on the weight of the apron and on the weight of the tension weight roll on the frame. Our weight is a bit too light for the use of synthetics, hence we experienced great difficulty in short life, aprons picking up an excessive amount of lint, and with the aprons buckling under the rolls and tearing off. A synthetic apron of the correct weight for the tension weight roll in use might give satisfaction, but for our use we have found leather to be much better."

Mill No. 4 said, "Our limited experience with synthetic long-draft aprons indicates a possibility of their being superior to chrome tan." Mill No. 11: "We have some synthetic aprons that have been on 12 months and they have proven cheaper than leather on Whitin long draft." "Synthetic aprons last several times the life of leather on Casablancas long draft," said Mill No. 14.

Mill No. 20 said they are experimenting with synthetic aprons on Roth and Casablancas long draft and "the initial results are very promising and we believe the synthetic apron has fine possibilities."

### Preventing Slubs in Piecing-In on Long Draft Spinning

The eighth spinning question was, "On long draft spinning, a fairly coarse roving is always used, much coarser than on regular spinning. This has increased the danger of slubs made when roving is pieced in behind the back roll. Is this a recognized evil of long draft spinning? What is the best way to piece in roving and make the smallest slub?"

Answers to this question fell into several distinct categories. Mill No. 5 said, "In creeling single roving, we let the splice run through the rolls and then break the end down and put it back up". This method is recommended also by Mill No. 13 and by Mill No. 7 who said guides on the spooler or winder should be set close enough to break the end down. Mill No. 6 prefers splices to make gouts in yarn large enough to be caught by slub catchers.

Mill No. 1 said, "In piecing up roving behind the back roll we first insert the end of the roving to be creeled into the trumpet, then break off the tail of the empty bobbin by twisting to take out the twist. The length of this tail must be such as to reach from the bite of the middle roll to the bite of the back roll; this requires a tail of about 3 or 3½ inches with a feather edge." Mill No. 11 does it like this, too.

Mill No. 4 makes its piecings with approximately a 2-inch lap and each end is twisted into the body of the roving. Mill No. 2 said, "The new end of roving should be twisted softly to the end of the roving that is running out, and then broken off just as it is caught by the back roll." Mills Nos. 9 and 18 use tapered piecings, splitting the roving about two inches and twisting around the sharp tail of the other end. So does Mill No. 17, as well as Mill No. 20.

### Methods of Teaching Spinners

"What have you found to be the best method of teaching spinners?", was the ninth spinning question.

The answer of Mill No. 1 was representative: "We have found the best method of teaching spinners is by use of an instructor. Each learner is hired on a two-weeks trial period. After passing this test she is given four additional weeks at the end of which she is expected to handle a full job. When the learner comes to work she is instructed on the principal operations of spinning for the first three or four days. Then she is assigned to one side where she is taught cleaning. Sides are added as she is able to handle them.

"For best results it is important not to overload the instructor. We think eight learners to be sufficient. It is also important to have several days between the intervals at which learners are added to the group, which insures learners coming off at a comparatively steady flow. It also gives the instructor sufficient time to get each learner started off correctly.

"In addition to the instructor we have an experienced spinner who assists the instructor after learners have been assigned sides. This spinner helps to keep the job in good condition and thereby prevents undue discouragement of the learner from getting 'stuck up'. A chart is kept on the progress of each learner in the form of a time-table. It is important to keep the learner's time so planned that she will have a job before her at all times."

The answers of Mills Nos. 2, 3, 4, 5, 7, 8, 10, 12, 14, 15, 16, 17 and 20, while differing in details, agreed with this procedure in principle. Mill No. 9 specifically mentioned the methods outlined in the Job Instructor Training Courses as having great merit.

### Spindles Wearing at Top

The tenth and final spinning question was, "We are having trouble with our spindles wearing at the top of the blade. Our spindle speeds range from 7,000 to 9,000 r.p.m. What do you think causes this, and how would you remedy it?"

As to the causes, most answers appeared in agreement on the idea that it is primarily due to improperly fitting bobbins. Mill No. 1 said it is partly due to prevailing high spindle speeds, larger packages and longer traverses. Thread chokes on the acorn of the spindle, preventing the bobbin from going down to its proper place, were suggested by Mill No. 11. Mill No. 1 added that the condition is aggravated by manufacturers' inclination to make the top end of the spindle so much smaller than the spindle blade. Mill No. 8 had secured from a bobbin manufacturer a chart showing the proper bobbin dimensions for different spindle designs.

# CURRENT TEXTILE TOPICS

## Confused Economics Mar War Effort

WAR IS a time of abnormal conditions.

That, no doubt, has always been true, in spite of the prevalence of wars in one part of the world or another for generations almost beyond count. In the present global war, however, economics have been upset not only by the influences that have prevailed in other wars, but by the very expedients adopted with the intent to profit from sad experience and to maintain a stabilized situation through a time of inevitably abnormal conditions.

After a year and a half of war, the textile industry of this country and other branches of business were still struggling for practical methods of operation under the regulations and restrictions of government agencies experimenting with plans to avert rampant inflation and subsequent disastrous consequences. But business has been confused by lack of co-ordination in efforts of government agencies and the mills have gone backward in production when the paramount issue has been expansion for the war need.

At the end of April, we read the report that discord between the WPB and OPA was coming to a head. The WPB on the one hand had found industry, notably textiles, co-operating from the start of the war with its program for the greatest possible production. But for many months the mills have faced upsetting, nay impossible in many ways, conditions of production under OPA regulations.

Re-negotiation agencies have aggravated the problems of mills. At the present writing, a bill was reported as brought before the House for the repeal of the re-negotiation of war contracts act. It had been undeniably a burden on industry and also of doubtful financial advantage to the nation.

## First Half of 1943 Finds Lag in Mills

Throughout most of the first half of this year the story in cotton textiles has been largely one of trying to secure a reasonable relationship between prices of goods and costs of manufacture. Yet with the WPB calling for more and more goods, the OPA was not found agreeable to changes in ceilings which would make capacity operations practicable under the advanced costs of production.

For months the mills have refrained from offering deliveries far ahead, except in the case of vitally necessary war goods. For one thing they were uncertain of the future course of wages. For another, they faced an unrestricted market for raw cotton against the inflexible ceilings on their cotton goods.

After the "hold-the-line" order, the situation became more intense, with cotton manufacturers being given to understand that ceiling adjustments could not be considered. Along in May it was stated that any rise would aggravate the coal wage controversy, textiles being an important component of the cost-of-living issues.

Yet textile labor, seeing the confused condition of government policy, found the time ripe for pressing toward a wage rise. Just before mid-May the Textile Workers' Union, in convention at New York, demanded that wage increases in straight time hourly rates be granted to compensate in full for the rise in the cost of living. The workers heard Mrs. Roosevelt defend the "hold-the-line" order, but she asserted that a rollback of prices was impractical and criticized the OPA.

## Outlook for Second Half Waits on Political Moves

Consumption of cotton in April, the latest statistics available, reflected the seriousness of confused control. The total was 938,989 bales, compared with 999,749 in the same month of last year. This drop of 60,760 bales at the beginning of the second quarter coincided with reports of mill complaints on many scores and the period has been one of political-economic disturbance almost throughout.

## More "E" Awards to Textile Plants

Textile manufacturing firms that were awarded the Army-Navy "E" for excellence in war production during May included the following:

Gossett Mills (Lad Lassie, Riverside, Toxaway and Pendleton plants), Anderson, S. C. (May 7).

Aragon Mills Division, A. D. Juilliard & Co., Aragon, Ga. (May 10).

Peerless Woolen Mills, Rossville, Ga. (May 11).

Proximity Mfg. Co. and Revolution Cotton Mills, Greensboro, N. C. (May 14).

Frank Ix and Sons, Inc., Charlottesville, Va. (May 15).

During May it was announced that the award would be made to the following:

Nashawena Mills, New Bedford, Mass.

Shelbyville Mills Division, U. S. Rubber Co., Shelbyville, Tenn.

Callaway Mills (Hillside plant), LaGrange, Ga.

The Dixie Cotton Mills, LaGrange, Ga.

Figures on active spindle hours show that 1943 lost 543,306,425 hours from the 1942 total in January and 210,201,068 in February. They gained 273,288,051 in March, but the statistics on cotton consumption for April indicated that another loss in active spindle hours would be shown. Hours for the first quarter were:

| | 1943 | 1942 |
|---|---|---|
| January | 10,820,499,537 | 11,363,805,962 |
| February | 10,246,497,646 | 10,456,698,714 |
| March | 11,647,373,456 | 11,374,085,305 |

The mills of the politicians grind slowly. In the face of early spring urging of production for 1943 above the record of 1942, there was persistent delay in constructive governmental action during the second quarter to stem the tide of reaction in output. Thus it remains for the last half of the year to bring whatever development may come to achieve the desired objective.

## Industry Criticisms Specific, Constructive

Re-negotiation was under fire by Congress in the middle of May. There was some hope that the action of the War Manpower Commission classifying textile occupations as essential would help to stabilize employment, yet continued fear of drift to other industries for war work and further drain for the armed forces.

Efforts of the WPB toward increased production by measures for simplification bade fair to be nullified by other factors obstructive to capacity operation of mills, notably the re-negotiation and the price ceiling situations. The spring procurement program of the Army found mills offering goods for early delivery but leary of distant commitments because of fear over costs. There was apprehension over what would happen later on raw cotton and also on the effect of the proposed 20 per cent withholding tax in July.

Re-negotiation was challenged as discriminatory against the mills that were contributing most to the war effort. Moreover, as pointed out by Herman Cone in his address as president of the American Cotton Manufacturers Association: "We haven't as an industry asked for loans; we haven't needed any government intervention or help."

As Mr. Cone also said, in substance, it might seem that the industry is chronic in opposition to efforts of the

government. But in reality it has not been generally condemnatory of Federal policies. Criticisms have been specific and are aimed to be constructive for the war effort.

## New England Mill Situation

COTTON MANUFACTURE in New England continues to run in a thorny path. The figures on cotton consumption for all months of the cotton season beginning August 1, 1942, with the exception of those for September, to the end of April, show losses from those of 1941-1942. The total for April was 94,420 bales, against 118,846 a year previous. The total for nine months to April 30 was 890,877 bales against 983,412 a year previous.

This in a period of war effort when larger rather than smaller production has been the aim of the nation is indicative of unfortunate planning somewhere and a serious condition in the national economy. To maintain the 1942 level, or to balance that level in the coming months of 1943, appears to be an impossible task. The amelioration of the situation of the first half of 1943 is up to Federal authorities, for regulation of mill activities is the governing factor.

It was stated recently by a competent authority that the industry has been operating since January 8 under a ceiling price order which, in the fine goods section at least, does not return costs of production. New England, although cut from about half of the nation's cotton manufacturing industry since 1925 to about 20 per cent, still has 80 per cent of the fine goods division.

Military goods output has risen to 60-65 per cent of output. That leaves 30-35 per cent for civilian purposes, but since over-all production is around one-third above normal, this figure for civilian is misleading by itself. No shortage of goods for the public has been suffered to date, but by the end of the year it may be found considerable.

### Section Bears Brunt of Production Losses

In the first month of the current calendar year, mills of this district lost in round figures 383,000,000 active spindle hours against the total a year previous. The national industry lost 543 million. February showed a New England loss of 314 million, while the country lost 210 million net. March had a national gain of 273 million, against a loss in this district of 123 million.

During the first quarter, cotton consumption in the various New England states showed declines from 1942 ranging from 9.7 to 24.2 per cent. The average was 13 per cent. Massachusetts, the predominant state in cotton manufacture, made the best relative showing. Not only are hours shorter in New England, but active spindles in April were only 4,830,164, against 4,962,080 in the same month last year.

Some of the difficulty is that inevitably arising from dislocations in employment arising from war, but the confusions incident to regulations of Government agencies are held to be hamstringing mill operations. The desperate efforts of government departments to reconcile conflicting elements in the effort to maintain stability have continued to destroy mill incentive for production except on priority business.

### Anti-Inflation Moves Find Trade Approval

Mill interests have steadfastly approved moves by the government to hold inflation in hand. The spring stabilization order of Economic Director Byrnes was accepted as constructive in a time when inflation appeared definitely threatening. But OPA's course following the "hold-the-line" order of the President was interpreted as discriminatory against the maintenance of civilian cotton goods business.

Tacit recognition of the justice of mill claims for higher ceilings relative to advanced costs of production was given in the raising of maximum prices for combed yarns to be used solely for military purposes. It was argued that, being purely for government goods, these increases would not affect the cost of living.

Such a move was not one to stimulate the over-all production of cotton mills, however, and it led immediately to the selling of yarn output for months ahead but the decline of further civilian business at the unchanged ceilings. The sale of government-owned or controlled raw cotton at favorable prices was one alternative relief proposal. Another was a subsidy plan.

Action by the War Manpower Commission was encouraging to mills as a potential force of stabilizing employment. Whether it would actually freeze workers in textile mills, against the demands of other war plants or the call for military service remained to be seen.

Re-negotiation remained a bone of contention for the mills in May, with hopes of its elimination. New England interests charge that it was a serious influence upon the national economy as a measure contravening the sanctity of contracts.

# "THE SITUATION" as Seen Across an Executive's Desk

**May 17, 1943**

FOR THE SAKE of the record and for the information of those who may not have the important facts relative to the mandatory policies of the Employment Stabilization Plan, we record several important principles in "hiring practices," and "separation practices".

There are many details contained in the directive which can be clarified by consulting with the U. S. Employment Service in the local or district area.

### Hiring Practices

1. Every individual employed after April 18, 1943, must be required to fill out a "Classification and Release Record" unless the individual furnishes you with a "Referral Card" issued by a United States Employment Service Office.

2. If the "Classification and Release Record" shows the individual to have been employed within the preceding 30 days in any of the 35 essential activities listed in Regulations 4, the employment manager must either decline to employ the individual, or may employ him temporarily subject to subsequent approval by the Employment Service.

If the employment manager decides to employ such an individual temporarily pending U. S. Employment Service approval, he must transmit immediately to the local Employment Service office, the "Classification and Release Record" which the individual has filled out, together with any separation notice, certificate of availability, release, or other evidence of employment termination which the individual may have secured from his previous employer.

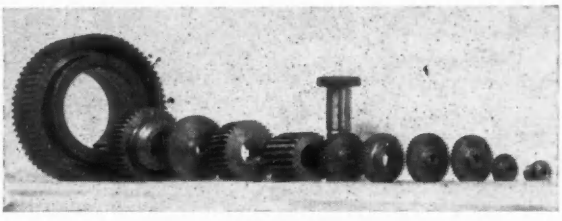
All "Referral Cards", and other documents having to do with employment under this stabilization plan, must be very carefully filed and preserved as a protection against any question that may subsequently arise with respect to any individual employee.

3. No worker may be employed whose regular full time occupation was in either agriculture, non-ferrous metal mining, lumber, or in an essential industry within an area covered by a

# Repair Parts
## to Keep Mills Humming

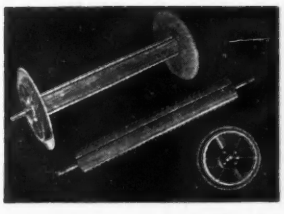
### TEXTILE CASTINGS

Most-used textile patterns are carried in stock and less frequently used castings can be supplied quickly. Castings from the foundry or fully machined, as you prefer.



### GEAR

All types and kinds of gear for any use. Many in stock for immediate shipment and patterns for many others that can be cast quickly. Our gears have proved their performance under all sorts of conditions and their cost is low.



### LOOM BEAMS and BEAM HEADS

West Point Foundry and Machine Company supplies complete loom beams, barrels or heads to any specification. They have proved themselves highly efficient, long lasting and economical. Let us quote.

NOW that you're making the most out of what you have, there are many ways the West Point Foundry and Machine Company can serve you, your superintendent and your master mechanics. We carry many needed repair parts in stock and can furnish practically any other textile repair promptly. Send us a sample, description or drawing of the item required.

### COMPOUNDS

Frequently, replacements of broken parts can assure you better service. This compound, built throughout with spiral gearing eliminates back lash and provides quieter, smoother operation.

### BALL BEARINGS and HOUSINGS

Ball bearings are one of the surest ways to make your machinery outlast the duration. We can regrind bearings or furnish new replacements. Send us your old races or worn complete bearings.

**WEST POINT FOUNDRY & MACHINE CO.**
*(Batson-Cook Company, Owners)*
WEST POINT, GEORGIA

War Manpower Commission Area Stabilization Plan, except upon the presentation by the individual of a "Referral Card" from the U. S. Employment Service.

## Separation Practices

1. Each individual leaving the service of a company must be provided with a "Termination Slip", which the individual must take to the nearest U. S. Employment Service office or to the Employment Service office serving the area in which he expects to secure new employment. This "Termination Slip" must be furnished to the employee within three days of his request, but the employee may not separate from his work pending the issuance of the "Termination Slip".

2. If an employer fails to grant a "Termination Slip" within the specified time, the worker may request the local U. S. Employment Service to review the case and to determine whether the worker may be entitled to the issuance of a "Referral Card" irrespective of the employer's failure to furnish the "Termination Slip", but as stated in the previous paragraph, the worker may not leave his employment pending a decision in the case.

3. In determining whether it is in the best interest of the war effort to permit the worker to transfer from one essential activity to another, contrary to the wishes of the present employer, the U. S. Employment Service may approve the transfer and issue a "Referral Card" if one or more of five specified conditions are found to exist with respect to the worker's present employment.

## Five Specified Conditions

1. Where there is presented reliable evidence that the worker is competent to perform higher skilled work than his current employer is able or willing to provide, or that he is not being utilized at his highest skill;

2. Where the worker is not being employed at full time or has not been employed at full time for a substantial period of time;

3. Where the worker has been discharged by his last employer. (For the purpose of this plan, a worker who for any reason has left the employ of an employer shall be deemed to have been discharged, whenever such employer refuses to re-employ him in his former position or a comparative position, without prejudice to any right or privilege previously enjoyed by him);

4. Where a worker has been laid off an indefinite period, or for a period of seven or more days;

5. Where the worker would be subject to undue personal hardship because of his being required to remain in his present position.

The following factors, among others, may be taken into account in the determination of whether the worker would be subjected to undue personal hardship:

i. The health and physical capacity of the individual or the health of his immediate family;

ii. The family circumstances, and other relevant personal circumstances of the individual;

iii. The housing and community facilities, including commuting facilities, available to the individual.

## Cotton Price Control

In accord with the "hold the line" policy of the stabilization director in order to prevent uncontrolled inflation, the American Cotton Manufacturers Association, at its convention in Atlanta, on April 30, 1943, endorsed the recent action of the Government in stabilizing the price of cotton.

It was felt that an attempt to fix rigid prices on each of the 600 odd cotton qualities was impractical and would be very confusing and destroy the flow of cotton which is so necessary at the present time. Again, it would be virtually impossible to impose and police these prices.

The policy approved can be stated in a few paragraphs:

1. When prices tend to rise to inflationary peaks, Government owned and controlled cotton can be released in amounts and quantities to relieve the pressure of demands.

2. A careful review of all Government cotton textile specifications to limit the use of scarce qualities of cotton to those products which imperatively require it, and to limit those products to strictly essential uses.

3. Restrict to maximum degree possible the shipment, under the Lend-Lease Program, of the relatively scarce qualities of cotton which are needed in this country.

These controls, if intelligently applied, will give ample control and will not disturb the established methods of trade to any unusual extent.

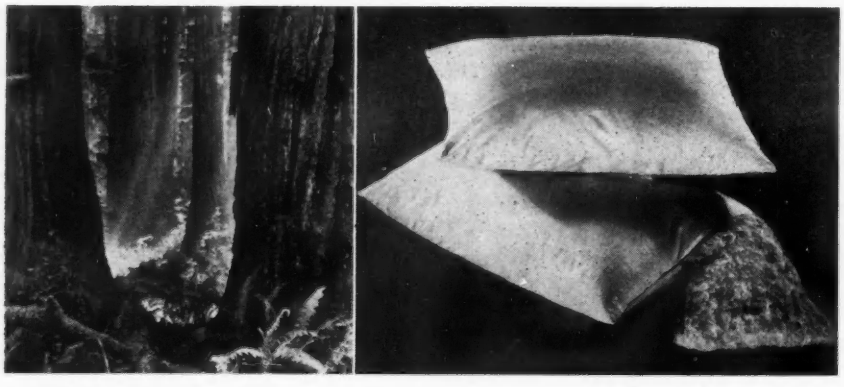
## No Textile Price Rise Planned

Office of Price Administration on May 5 announced emphatically that no upward adjustment of yarn and textile prices is contemplated.

This statement was made to clarify the thinking that some rise was in the making and OPA thought this fact might deter some segments of the yarn and textile trade in their production schedules or in their sales programs while waiting for the rises.

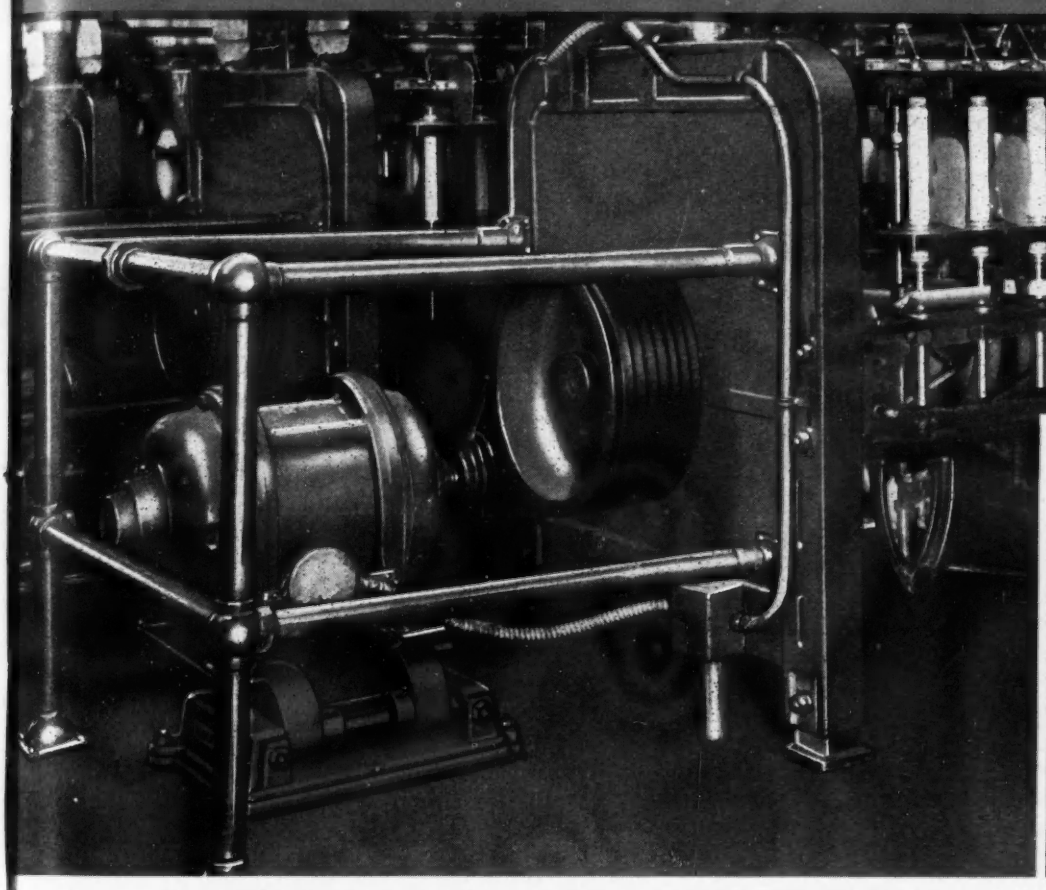
The rise in prices was stimulated by the fact that many segments of the industry have implored OPA for relief from the gradually narrowing margins due to increased costs of labor, materials, supplies and the diffi-

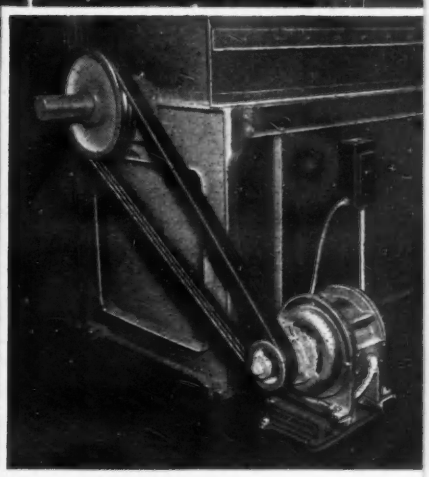
## Redwood Fiber Fills War Needs



The new fiber developed from the inner bark of the California redwoods by The Pacific Lumber Company, San Francisco, Cal., now releases vast quantities of cottton required in the war effort, according to C. L. Thompson, head of the company's research division. This latest development following closely on the heels of the original discovery that redwood fiber blends with wool in fabrics and felts, will relieve an impending shortage of cotton linters required in the making of gunpowder and explosives, it is pointed out. This newly-discovered textile fiber is described as being highly resistant to moisture and humidity, thereby imparting its natural springy resilience to the material with which it is mixed. Its introduction into mattresses, comforters and pillows, it is said, greatly prolongs the resilient life and utility of these essential items; it is also used with wool in blankets closely approaching the appearance, weight and warmth of all-wool.

# IMPROVE V-BELT DRIVES ALSO





## ROCKWOOD *automatic belt tightening* MOTOR BASES

### DOUBLES BELT LIFE AND INCREASES DRIVEN MACHINE PERFORMANCE

WEST Point Mfg. Co. at Langdale have these spinning frames and openers with V-belt drives and Rockwood automatic belt tightening. The Rockwood pivoted motor base operates with V-belts the same as it does with flat belts—*taking up the belt stretch instantly and making the belt tightness automatically match each load change.*

When you watch automatic belt tightening drives perform it is obvious why the driven machines operate better—as they are driven at dependable and uniform speeds. This results not only in greater machine output but also in a better quality of work done. Belt life, too, is doubled—either V-belts or flat belts. NEVER BEFORE HAS A BELT DRIVE FROM ELECTRIC MOTOR TO DRIVEN MACHINE BEEN SO SOUNDLY ENGINEERED.

ROCKWOOD AUTOMATIC BELT TIGHTENING MOTOR BASES ARE AVAILABLE FOR IMMEDIATE DELIVERY. This is ONE important improvement you CAN make this year. *Add Rockwood motor bases to every belt drive in your plant.* Your nearby Rockwood distributor will be glad to discuss the matter—or write us at the factory.

**ROCKWOOD**

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*Specialists in Power Transmission Equipment Since 1884*

culty of trying to keep the mills completely operating due to scarcity of trained help.

The industry and the market were further influenced by the fact that there was considerable speculation about rises in prices due to the fact that OPA had allowed a 6 per cent increase in prices of combed yarns for sale for military purposes but not for civilian use.

The statement of the OPA, if adhered to, indicates that it will do nothing at present to disturb the "hold the line" policy of Director Byrnes. It can make adjustments which do not disturb the policy. In the meantime, the mills struggle on under the burden of increased costs, increased taxes and the ravages of re-negotiation.

## Labor Costs

So far as the foregoing items indicate, it would seem that the policy of controlled inflation is operating successfully. It has operated always under the shadow of impending unjust labor demands. Labor by and large has done a good job even though there have been unwarranted demands and fierce battles on the production line. Textile labor has been unusually loyal and patriotic but now and then there are storms and conditions which cast their influence into our own peaceful field.

Labor in many sections of this nation refuses to co-operate in the "hold the line" policy. This is typified most impressively by the United Mine Workers and their leaders. They and people like them threaten the safety of our economic life at this period. Their great voting strength in this political world of war in which we live frightens some of the politicians and their future careers.

The provisions of the "Little Steel Formula" have been operating fine and they set a ceiling over wages which really puts labor in the same class with other groups of our economic life. Labor in some cases refuses to be guided by the provisions of the "Little Steel Formula" and in the case of the U. M. W., they refuse to be reconciled by the War Labor Board.

Most people think that the pressure of political influences in the case of the United Mine Workers will either destroy the provisions of the "Little Steel Formula" or show how it may be circumvented, which is the same thing. If this should happen, then the inflationary danger will run rampant throughout the nation and the "line" will break. All labor will tend to follow the successful wage increases. Commodities in the textile industry are already loaded with about all of the labor costs they can stand.

Present price ceilings are already strained. The future only can tell what the outcome will be.

## Child Labor—Caution

The Labor Department's latest figures—January 1943—showed that it is estimated that 2,000,000 children between 14 and 18 years of age are gainfully employed. About 25 per cent of these were only 14 or 15. Very few of these children were engaged in war industries because under the Federal laws children under 16 cannot be employed in manufacturing establishments.

Because of manpower shortages, the wages are higher than ever before and pressure has come from both parents and industries to relax or suspend child-labor and school attendance for the duration. Insofar as this writer is concerned, he knows of no movement or pressure being exerted by the textile industry to remove the general provisions of child labor. There has been some thought that the government might be a little more liberal about the provisions of employing minors between 16 and 18 years of age. Now and then, in the press, there is a statement of an occasional minor under age being employed in the textile industry. Nearly always there is a reasonable explanation and the violation is immediately remedied.

In these days of labor scarcity, employers must be very careful to comply with all provisions of the laws relating to the employment of minors and particularly those under 18 years of age.

During the first week of May, at a Washington meeting of the advisory committee of the children's bureau of the Labor Department, Dr. Frederick Allen suggested as a partial solution that schools and employers unite to make war-time employment of children a part of their educational training.

Dr. Allen, director of the Philadelphia Child Guidance Clinic, recommended that the child's choice of employment be carefully supervised and that school authorities also aid children in working at such jobs. Then, school credit might be given for approved work.

The report does not indicate the reaction of the children's bureau of the Labor Department. Such a plan seems reasonable and feasible until one realizes the red tape and routine that would be set up to operate such a plan. Already the labor department has so cluttered up the policy of training learners that it is extremely difficult to follow. The final word of this discussion is a word of caution to the textile industry, not to mar its splendid record on the compliance with the labor laws.

## Termination of War Contracts

The proper protection of Government contractors, sub-contractors and sub sub-contractors, upon the termination of contracts at the end of the war, is of vital concern both to such classes of contractors and to the economy of the nation. It is a necessary protection in preserving the ability of industry to convert rapidly to production of peace-time goods.

Although The Cotton-Textile Institute, together with an able committee of manufacturers and its legal staff, have been in conferences with the several departments of Government concerned in working out protective clauses, the American Cotton Manufacturers Association in its recent convention passed a resolution importuning "the several Government departments concerned to proceed promptly to work out, with proper officials of this industry and others, a fair, equitable and sound termination clause or clauses to be incorporated in such contracts of contractors, sub-contractors and/or sub sub-contractors."

It is rather definitely understood that progress is being made on this important subject and that the various departments of government are sympathetic with the idea. The difficulty of a final inclusion of the clause, or clauses, seems to be the inability to formulate them because of the complexities of the situations. This is no excuse for not working them out and making them a part of present and future contracts.

## Subsidy vs. Inflation

On September 15, 1942, the cost of living index of the U. S. Department of Labor stood at 117.8. This was considered high enough and efforts on the part of the Government were made to hold it at that level and perhaps reduce it if possible.

On February 13, 1943, the cost of living index of the U. S. Department of Labor stood at 120.9 indicating that controls were slipping and that something must be done.

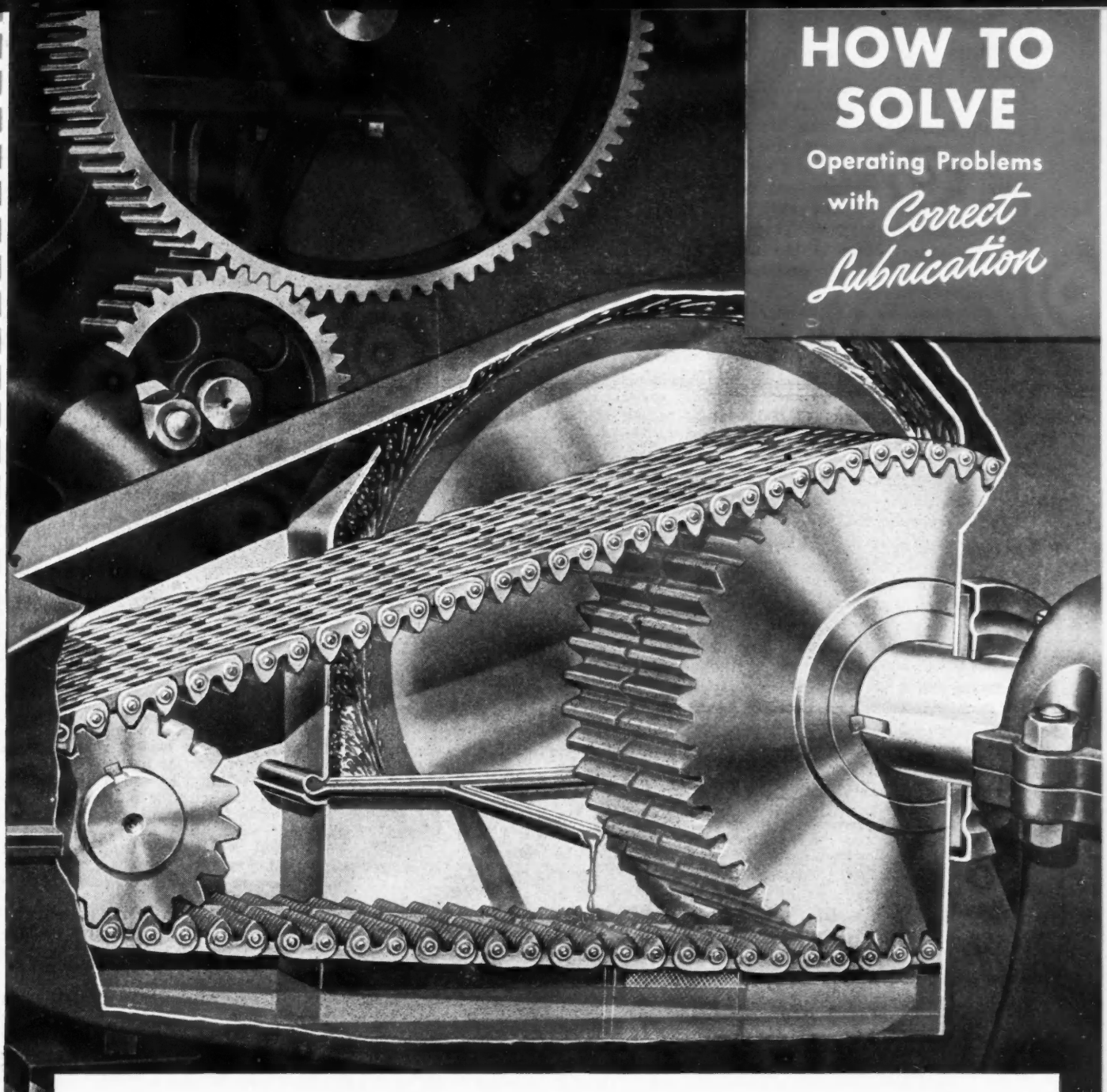
On Sunday, May 9, OPA took two steps to stop the rise and if possible to push the index down.

The first step was to announce ceiling prices in dollars and cents on more than a score of essential foods in 150 key cities. These prices were worked out on a community regional basis, figured on the highest wholesale price in the community plus the operating margin of small independent stores. Such ceilings will eventually be applied to all small towns, to chain stores and large independents and to all food items except luxuries.

Another part of this program is a

ONE OF A SERIES OF SUGGESTIONS TO AID PRODUCTION

ONE OF A SERIES OF SUGGESTIONS TO AID PRODUCTION



HOW TO SOLVE

Operating Problems with *Correct Lubrication*

# Keep this "Chain Gang" Tough!

MODERN CHAIN DRIVES are playing an important part in maintaining wartime production. They have been designed to take heavy loads at high speeds. They'll do their job week after week if given proper service and lubrication.

First, keep your chain drive in proper mechanical condition and correct adjustment, then the next step is... **USE GARGOYLE VACUOLINE OIL** for the type of lubrication shown above. This oil will penetrate the close clearances between the pins and bushings. It will provide a dependable, protective oil film... assure minimum maintenance...maximum oil life. There's the type lubrication you're looking for.

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CALL IN SOCONY-VACUUM

10 per cent reduction in the retail prices of beef, veal, pork, lamb, mutton, butter and coffee effective June 1.

These price ceilings and roll-backs will normally squeeze some one between the retailer and the farmer, hence the second phase of price of living control came in the form of subsidy payments to processors of rolled-back items.

The President and Director Byrnes approved the plan and ordered the subsidies financed by the Reconstruction Finance Corporation. Such a program will cost the Government and the taxpayers more than $400,000,000 annually, according to the estimates.

In effecting this plan the government had designs for keeping the price of food low for the consumer and yet not discouraging the farmer from striving for maximum food production. It was also intended to lessen the pressure of labor due to its alleged undue increased cost of living.

How such a plan will finally operate in inflation control remains to be seen. The black market and the chiseling retailer have not yet been eliminated. Again, if subsidies are used to absorb the shock of wage rate increases, the plan will be bad. Subsidies can be handled intelligently but they must not be used as a camouflage.

## L-99—As Amended

Production of cotton fabrics will be increased by about 220,000,000 yards annually without the use of additional facilities or raw materials, as the result of an order issued May 1 by the War Production Board further simplifying constructions of a long list of cotton materials.

The increase in output—which is estimated at 10 per cent for the particular looms covered by the action—will be effected through assignment of the looms to production of only specified types of cotton fabrics. If the looms are not already working on these constructions, they must convert over within the period specified by the order—varying with each type of fabric.

Approximately one-third of all cotton looms—or 120,000 looms—in the country are affected.

In actuality, the order (L-99, as amended) now covers 55 per cent (220,000) of all the looms in the industry, since an earlier version of the order, issued last March 6, imposed similar restrictions on constructions for approximately 22 per cent of the total number of looms. Overall, it is estimated that a total increased production of 450,000,000 yards annually of cotton fabrics will be realized.

One effect of the order is to freeze production of all looms now producing birdseye and gauze diaper cloth. This means that these looms cannot be converted to production of other types of fabrics, assuring a continued supply of diaper cloth at the current rate of output.

Generally, the amended order provides for production of serviceable, utilitarian fabrics which at the same time meet all military and essential needs. Wasteful and unnecessary use of material is discouraged through restrictions on the closeness of weave and other construction factors. While fabrics will be lighter and less tightly woven, it was emphasized that the constructions decided upon have been carefully tested and proven durable and that both the savings of material and concentration of the looms on a limited number of fabrics will make possible the increased production.

Several additional types of cotton fabrics are now brought under the order, including all wide sheetings; narrow drills, twills, jeans, sateens, and gabardines; all wide drills, twills, and sateens; window shade cloths; pajama checks; bandage cloths; gauze and cheese cloths; broadcloth and poplins; diaper cloths; and miscellaneous print cloth yarn fabrics.

Among construction changes required by the order are:

1. Sley and pick are reduced for osnaburg (used primarily for agricultural bags) which will lighten the weight of the cloth.

2. Fifty per cent of all looms operating on wide sheetings are converted to pro rata widths of narrow Class A and Class B sheetings.

3. In the case of so-called print cloth yarn fabrics, the pick count is generally reduced and many fabrics are eliminated. In addition, by reducing the average weighted pick by 9 per cent for such fabrics, the heavier, more tightly woven materials of fancy construction will be discouraged.

4. Pajama checks, used almost entirely for production of underwear for the armed services, are reduced in count from 88 to 80 square.

5. Bandage cloths are reduced in weight from 8.20 yards to a pound to 8.60 yards per pound—a lighter-weight material.

Conversion of looms not already operating on the specified types of fabrics must in most cases be effected in from 45 to 90 days. However, production of fabrics listed on Schedule A of the order to meet specifications of the armed forces is allowed until July 1, while for fabrics on Schedule B, such production can continue until August 1. After that date, however, all production for military purposes must conform to the constructions listed in the order.

Restrictions on distribution of osnaburgs, and Class A and Class B sheetings, limiting deliveries to defense orders (unless otherwise authorized by WPB), are further extended to cover wider widths of Class A and B sheetings not previously included in this provision.

# A Review of the Cotton Waste Market

**Boston, May 17, 1943**

COTTON WASTES are in routine demand with sellers in a better position when it comes to discussing prices. The body of the market is firm though the spinning stocks are not meeting much business, the demand being restricted by the moderate letdown occurring in the carded yarn division of the industry. That this is taking place is confirmed by a decline in cotton consumption during April to 925,000 bales as compared with 995,000 bales in March. Nothing very hopeful can be said about peeler comber. This material combed out of high priced staples is surely on the bargain counter.

There is no stock in the spotlight. A little of everything is selling at firm prices. The market has settled down to a waiting attitude. The situation in the spinning industry is not at this time conducive to any large interest being shown in the purchase of spinning wastes. The carded yarn division is losing production and the lifting by OPA of ceiling prices on certain counts of combed yarns for military use has produced further dissatisfaction instead of relief for the industry hemmed in between rising cotton and fixed prices for its yarns.

While it is common to refer to some good Government business pending upon this, that or the other material, it is only occasionally that any real assistance comes to the waste market in the way of Federal purchasing. The waste trade continues to be tied up chiefly to civilian consumption though an exception might be made in the case of threads and other materials for wiping wastes. Machiners here say that it is difficult to obtain anything more than a new dollar for an old one. Early contracts on Government and railroad wastes were taken on too low a basis

A few filling-in orders are arriving on specialty stocks such as peeler roving and Sak strips. Peeler comber and peeler strips have settled down during the general dullness to 12.00 cents for either good material. Not much is being done in soiled cards while oily cards and good cardroom sweeps are offered around 2.00 cents. Picker and fly are a little more active on some Government pillow business at prices slightly below the top of the year. Not much movement is seen in comber which, as some dealers report, has bogged down to a 12.00 cents basis. There is no real weakness in any section of the market though from the selling angle the situation has developed some irregularity.

Around the middle of May, white cop and spooler and white millrun threads had a rise of about one cent per pound. This strength was due to continued railroad demand for wiping wastes and additional invitations for the Government on some 25,000 pounds of white cotton wiping wastes.

*Patents Nos. 1863271—1993531 and others pending.*

Together, the **Nuform** Victory and Helper Straps are doing an outstanding wartime job in many of the country's leading textile mills.

# HELPER for VICTORY!

The **Nuform** Victory Strap gives longer and better service, because it is scientifically curved to permit the picker stick to hit squarely from top to bottom; thus prolonging the life of the check strap and at the same time resulting in smoother loom operation.

The Helper Strap, of **Nuform** design, is a conservation measure. This short strap only requires one-fourth the leather, yet it takes most of the punishment and saves the check strap. It can be quickly and easily replaced at very low cost. Complete details furnished on request.

## SLIP-NOT *Belting* CORPORATION

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# What the Textile Mills Are Doing

Arcadia Knitting Mills, Allentown, Pa., have moved their offices to two floors of the B. & B. Building. The RFC took over the company's plant for lease to the Mack Mfg. Company, and the machinery and equipment was later sold to the Princeton Knitting Mills, Watertown, Conn. At that time some consideration was given to the setting up of a new plant elsewhere, but Arcadia decided not to acquire any new machinery until the war is over. They have kept their sales organization intact and are letting out knitting contracts to smaller concerns throughout Pennsylvania and New York State.

American Thread Company has purchased the building formerly occupied by the Tallapoosa Mills, Tallapoosa, Ga., and are renovating it for the installation of about 12,000 spindles, to be placed on yarns for government orders. Julian M. Longley, general manager of the company's properties at Dalton, Ga., and Bristol, Tenn., is in charge. Robert & Company, Inc., Atlanta, Ga., are the engineers.

The Centerdale Mill property at North Providence, R. I., which has been owned for the past three years by William L. Clark, Milton B. Sweet and Henry E. Sweet, has been sold to the Atlantic Chemical Company which will use most of the structure for the manufacture of textile chemicals. The weaving business of Raymond and Harold White will continue to utilize its present quarters.

Hand Printers, Inc., Baltimore, Md., and Lawrence (Mass.) Print Works have been appointed finisher licensees under the American Viscose Corporation's "Crown" tested plan, being fully qualified to dye and finish rayon fabrics in accordance with the minimum requirements of the plan.

All of the mills of the American Woolen Company, including Wood Worsted Mills, Ayer Mill, Shawsheen, Puritan and Arden, which have been on oil fuel, have been converted to coal, using Westinghouse equipment and stokers.

Cape Hickory Mill, Hickory, N. C., is now in regular production on men's gray half-hose. The company is headed by Clyde Martin and F. O. Childers, who operates the F. O. Childers Hosiery Mill, Hildebran, N. C.

Lynchburg (Va.) Hosiery Mills, Inc., have plans for a new one-story addition, to be used for the time being for storage, and later for mill expansion. The company is now engaged in manufacturing parachutes.

Heywood Mills, Inc., is the corporate name of the new company now occupying the former plant of the Tilton Worsted Mills, Tilton, N. H. Arthur S. Brown, owner of the plant and machinery, is president.

Trenton Cotton Mills, Gastonia, N. C., has completed installation of considerable additional equipment, including six Saco-Lowell combers, two lap winders, two long-draft slubbers, and auxiliary machinery.

Canova Brothers Silk Co., Allentown, Pa., have moved their plant from Eighth and Pittston Sts., to a new and larger location at 206 East Hamilton St., where they occupy in excess of 30,000 square feet.

Southern Webbing Mills, Inc., Greensboro, N. C., converted to war production, are now concentrating production on webbing for gun straps, field packs, ammunition belts, etc.

Shields Hosiery, Dye & Finishing Co., Shelby, N. C., has begun operations. The plant, owned by J. E. Shields of Hickory, N. C., was transferred to Shelby from Hickory.

Application for charter has been made by Aztec Mill, Inc., Montezuma, Ga., headed by R. C. Collier, Sr., president of Montezuma Knitting Mills; J. S. Lavender and J. B. Easterlin.

Farwell Bleachery, Lawrence, Mass., has been sold to Ziskind Company. The plant, which has specialized in dyeing and finishing rayons, will be placed on the market for early re-sale.

Mount Airy Knitting Mills, Mount Airy, N. C., have completed the installation of additional machinery purchased from the Amazon Knitting Co., Muskegon, Mich.

Airedale Worsted Mills, Inc., Woonsocket, R. I., have installed 60 latest type Draper automatic looms, according to Joseph H. Axelrod, general manager.

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## Delta Council Holds 8th Annual Meeting

More than 2,000 members and guests attended the eighth annual meeting of the Delta Council, held at Cleveland, Miss., on May 12. Walter Sillers presided as president.

A list of impressive guest speakers included Governor Sam H. Jones, of Louisiana; Jeff H. Williams, of Chickasha, Okla.; and R. G. LeTourneau, of Toccoa, Ga.

Colonel Alexander Fitzhugh, head of P. P. Williams & Co., of Vicksburg, Miss., and a member of the Federal Reserve Board of New Orleans, was selected president of the Council succeeding Mr. Sillers. Other officers elected were: Frank Harbert, of Tunica, Irby & Turner; J. T. Thomas; and W. K. Anderson, vice-presidents; and Frank R. McGeoy, of Greenwood, Miss., treasurer.

Mrs. Dorothy Lee Black was re-elected as office manager and acting secretary-manager, with offices at Stoneville, Miss.

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## Nelson Heads Textile Deans

At the spring conference of the deans of the 11 textile schools, in Princeton, N. J., and New York City, there was created "The National Council of Textile School Deans", and Thomas Nelson, dean, N. C. State College textile school, Raleigh, N. C., was unanimously elected president; with Charles H. Eames, president, Lowell (Mass.) Textile Institute, as vice-president.

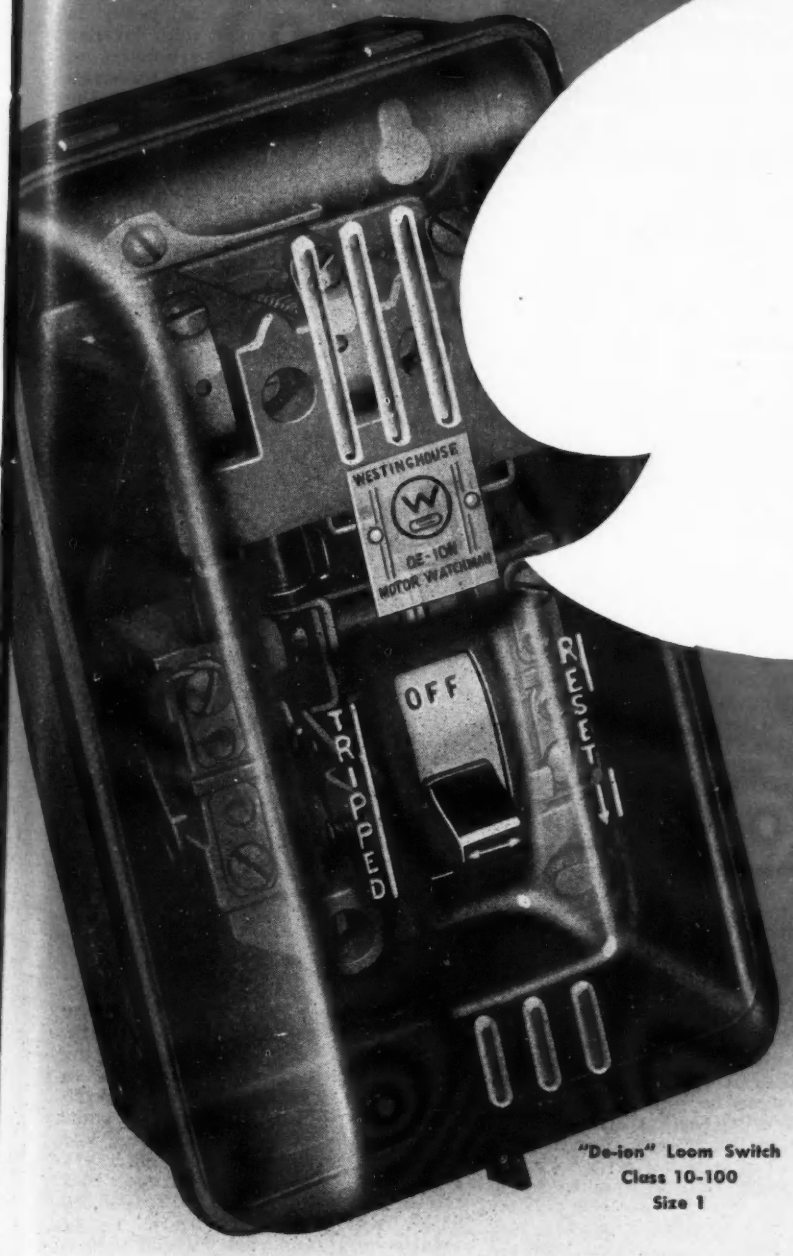
Dominating the discussions of the group was the problem arising out of the loss of so many students to the armed services. Students of textile engineering, unlike those enrolled in many other engineering courses, are not as yet qualified to apply for deferment. As a result many textile school students have been required to report at induction centers despite the fact they would have graduated and received their degrees if they had been allowed to remain a few months longer, and indeed, in some instances, a few weeks longer.

At Princeton the deans visited several departments of Princeton University and participated in discussions on personnel problems, industrial and labor relations, absenteeism, engineering of today and of the future, textile chemistry and fibers, research and the textile industries, and the future of the textile industries in terms of scientific and engineering advancements.

In New York the war-time functions of textile schools as well as their opportunities in the post-war period were explored, and among those who conferred with the deans on this subject was Sylvan T. Stroock.

# THIS STARTER THAT SAYS:

"I'm 'on'
I'm 'off'
I'm 'tripped'"

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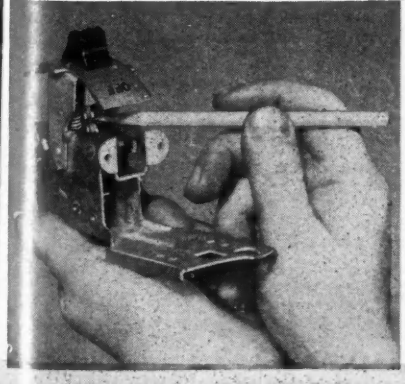
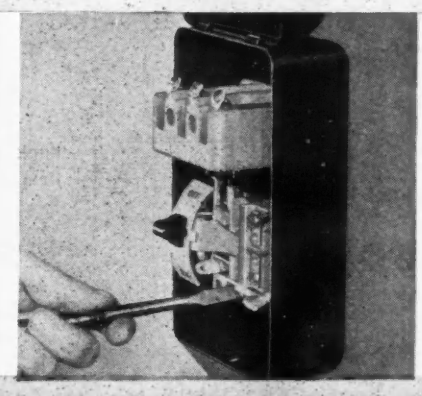
**QUICK-MAKE** as well as quick-break action prevents "teasing" of contacts. Contacts cannot be held partially closed. Arcing is reduced—contact life lengthened.

**EASY TO INSTALL...** terminals are out in the open, easy to get at. Through wiring, together with ample wiring space makes installation quick and simple.





Westinghouse

# COMMENT on the COTTON MARKET

**New Orleans, May 17, 1943**

THE COURSE of the cotton market during the past month was irregular and uneven due to conflicting developments. Trading was reduced to small proportions during this period and the open interest in the futures markets has been reduced about one-third through liquidation. Prices are also substantially lower than a month ago. The principal influences in the order of their importance were:

Orders, threats and deflationary statements of the OPA and other high government officials.

Tightness of contracts in the May position.

Operations of the CCC.

War developments.

Threats of the OPA and Food Administrator Chester Davis to place a ceiling on cotton and also threats to call the 1941 and 1942 loans checked the upward price movement which was so much in evidence during the previous month and started a liquidating movement. These threats, however, did not affect prices much though they dried up speculation. Trading became active again after the OPA announced it had abandoned plans for a ceiling on cotton and would rely on a selling program by the CCC to hold prices down. The selling price fixed for CCC sales was 21.38 cents a pound for the average of Middling $\frac{15}{16}$-inch at the designated markets and 21.75 at B mill points in the Carolinas for the same grades. As these prices were above the market at the time of announcement speculation revived and prices advanced to the levels fixed for sale of CCC cotton. This advance, small as it was, brought a warning from the OPA that if the market advanced much above the selling levels fixed for CCC cotton it would impose a ceiling on cotton sales. The market immediately lapsed into dullness again but prices were held up temporarily by the tightness of May contracts and good demand from spot firms for all notices of delivery issued by the shorts in that position. The smallness of certificated stocks and tightness of spots were other sustaining factors. However, the May position, along with other months, began to weaken around the middle of the month when it became evident that the prop which the May position exerted would soon be removed. News from Washington also continued to restrict speculation, or to induce liquidation of long holdings. Prices as this is written are substantially under those current at the time of the announcement of the OPA and CCC program.

The final liquidation in May, which occurred on the 14th, was made notable by the spectacular run-up of nearly $3.50 a bale in that position in New York within a few minutes time to 20.80, the highest recorded during the life of that contract. While the open interest in May, in New York, was larger than in New Orleans, there were no tenders until on the last trading day when notices for 1,200 bales were put in circulation. These notices were snapped up quickly and the remnant of the hedged short interest was forced to cover in the open market, causing the quick run-up. The liquidation of May in New Orleans was an orderly affair. Some cotton was tendered on May nearly every day in that market during the period of liquidation. The notices were stopped promptly and had no effect. Notices issued prior to the last day totaled 12,800 bales. On the last day notices for 7,250 were issued. That month went out steady in New Orleans and 39 points under the high made early in April.

The CCC recently asked for bids on about 90,000 bales of irrigated cotton grown in the Southwest on which it had no fixed prices. Bids for this cotton totaled about 200,000 bales but prices were too low and the CCC accepted bids for only 4,000 bales. CCC sales of other cotton under prices fixed by the OPA amounted to only 45,000 bales up to the middle of the month. The CCC reports loans on the 1942 crop up to May 8 of 3,047,837 bales compared with 2,217,678 to same date last year. Withdrawals to same date amount to 383,326 bales compared with 970,925 to same date last year.

The trade seems to be puzzled at the small withdrawals from week to week (they have been running around 30,000 a week versus 66,000 last year) in view of reports current that farmers have sold a considerable amount of their equities. Some attribute the small amount reported withdrawn to the slowness with which the withdrawals are reported by the CCC. It is probable, however, that the real explanation is that farmers have not sold any large amount of their equities, and do not intend to unless forced to do so.

Legislation has been introduced in Congress to extend the 1941 and 1942 loans on cotton for one year from date of passage of the bill. Under existing loan agreements the CCC has the right to call the loans on the 1941 and 1942 cotton any time. Other legislation is pending in the House to prohibit the CCC from selling $\frac{7}{8}$-inch cotton under 23.50 cents. Still another bill is pending in the Senate to prohibit it from selling any of its stocks under 25 cents. The charter of the CCC expires June 30. It is asking for an extension and also for increased borrowing powers in order to supply funds to the OPA and food administrator for subsidies to enable them to roll back prices of food. Reports from Washington indicate that Congress is strongly opposed to subsidies and that a clause will be inserted in the bill extending the life of the CCC which will prohibit any of its funds from being used for subsidies. Under existing orders of the OPA the CCC is restricted to sales on the basis of Middling $\frac{15}{16}$-inch to 21.21 cents in the Memphis territory, 21.75 in the Carolina mill districts and to 21.38 for the average of the ten markets. The official quotation for the average of Middling $\frac{15}{16}$-inch on May 15 was 20.87.

Reports current indicate that the crop has gotten off to a late start but is doing well in all sections except Arkansas where 1,000,000 acres of farm land were overflowed. Reports gathered by some of the private reporting bureaus indicate a small decrease in the acreage. The Department of Agriculture has revised its figures to show that 23,302,000 acres were planted last year, and 22,602,000 harvested.

There was some disappointment that the April consumption fell to 938,989 bales, which is well under recent months and compares with 999,749 a year ago. Consumption for nine months is given as 8,440,000 compared with 8,250,000 a year ago. These figures are accepted as indicating consumption for the season of about 11,200,000 bales compared with 11,170,000 last year. Details of the April consumption report will be found in another column.

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**CENSUS REPORT OF COTTON CONSUMED AND STOCKS**

| Consumption of Lint — Bales— | This Season | Last Season |
|---|---|---|
| In United States, April | 938,989 | 999,749 |
| In United States, March | 995,512 | 967,406 |
| In United States, 9 months | 8,440,411 | 8,250,167 |
| In Cotton Growing States, April | 818,169 | 849,866 |
| In Cotton Growing States, 9 months | 7,317,979 | 7,014,460 |
| In New England States, April | 94,420 | 118,846 |
| In New England States, 9 months | 890,877 | 983,412 |
| In All Other States, April | 26,400 | 31,037 |
| In All Other States, 9 months | 231,555 | 252,295 |
| **Mill Stocks** | | |
| In United States, April | 2,420,737 | 2,631,016 |
| In United States, March | 2,488,771 | 2,653,569 |
| In Cotton Growing States, April | 2,041,355 | 2,115,843 |
| In New England States, April | 307,033 | 429,043 |
| In All Other States, April | 72,349 | 86,130 |
| **Warehouse Stocks** | | |
| In United States, April | 10,596,445 | 10,490,811 |
| In United States, March | 11,469,546 | 11,349,293 |
| In Cotton Growing States, April | 10,320,900 | 10,111,915 |
| In New England States, April | 259,941 | 358,789 |
| In All Other States, April | 15,604 | 20,107 |
| **Active Cotton Spindles** | | |
| In United States, April | 22,893,630 | 23,102,176 |
| In United States, March | 22,859,160 | 23,087,626 |
| In Cotton Growing States, April | 17,483,676 | 17,500,430 |
| In New England States, April | 4,830,164 | 4,962,080 |
| In All Other States, April | 579,790 | 639,666 |

## One Improvement at a Time

Don't wait to stumble onto some job method improvement that will "make the headlines" because of the genius back of it. Start now to improve the first job you come to. Take just one job at a time and study it carefully. Don't wait for the "big killing". Take a simple job. Do something to it to make it easier, safer or more efficient. —*"Management Information", Elliott Service Co., Inc.*

# Strenuous wear AND maximum comfort

AMERICA'S fighting sons are hard on hose and underwear, but Standard's uniform quality yarns with a background of more than 66 years' spinning experience are equal to the strain. As the War's demand mounts for Standard yarns—in old and sometimes startlingly new applications—the civilian margin shrinks.

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**SPEED VICTORY—BUY WAR BONDS**

# NEW EQUIPMENT and MATERIALS

### New Permanent Cellulose Finish

Hart Products Corp., 1440 Broadway, New York City, have announced the development of a new permanent cellulose finish, known as Kopan, suitable for sheets, damasks, shirtings and many types of knitted and woven fabrics. Among the characteristics cited for the new product by its manufacturers are: excellent shrinkage control; increased tensile strength; even penetration; slippage elimination; availability in several viscosities for a variety of applications; excellent binding properties; and ease of use.

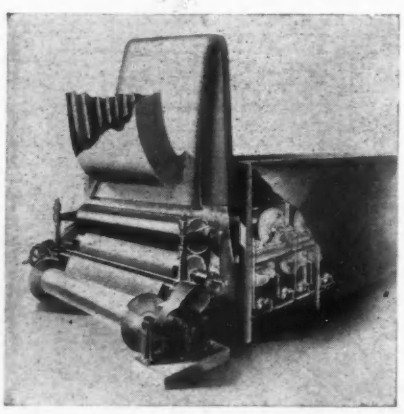
The producers state that Kopan is a natural outgrowth of the successful use of Permalon for military fabrics; that Kopan possesses all of the characteristics of Permalon plus a flexibility of formula that permits extensive variations for civilian uses and specific fabrics. As with Permalon, it is stated, no additional treatment is required when the Celludy pigment colors are added to Kopan.

◆

### Continuous Range for Impregnating Rayon Tire Cord at High Speed

One of America's leading tire manufacturers is now impregnating rayon tire cord with latex rubber solution at high speeds on a continuous process machine, designed and built by H. W. Butterworth & Sons Co., Philadelphia, based on their experience with finishing ranges in the textile industry.

The installation uses the padding technique of immersion in latex, squeezing between rollers and drying on cans, taking care that the solution is so adjusted to the pick-up that the proper amount of latex impregnates the rayon cord. The range begins with the feeding of the rayon cord into a two-roll Micro-Set padder. After the squeeze under 4,000 pounds pressure, the cord passes through a heated flue built in the shape of an inverted "U". This pre-drying speeds up the whole process.



Next the cord passes over a series of 22 steam-heated drying cans, arranged horizontally, and is wound onto a slip belt winder at the end of the range.

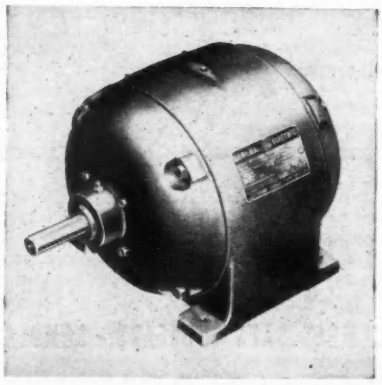
It takes 40 per cent less time to impregnate the rayon cord with latex in the continuous process range than the best speeds formerly attained.

All of the rayon cord being impregnated on this continuous process range is used for military purposes, especially aircraft tires.

◆

### New Line of Tri-Clad Motors

General Electric Co., Schenectady, N. Y., has announced a new line of totally-enclosed motors as the most recent addition to the Tri-Clad group of motors. They are available in both the polyphase, 60-cycle, induction type, and the single-phase, 60-cycle, capacitor



type, and are designed especially for use under conditions where abrasives, chemicals, rain, snow, and excessive dirt are encountered. The polyphase motors are furnished in frame sizes 203 to 225. The mounting dimensions are interchangeable with Tri-Clad open motors of the same rating.

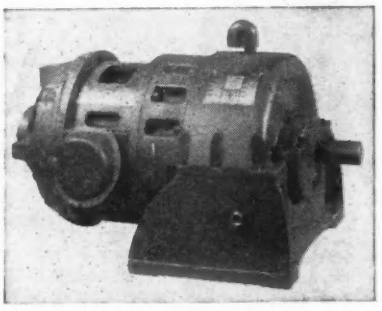
These new motors possess the basic features of the Tri-Clad group, protection against physical damage, electrical breakdown, and normal operating wear and tear. In addition, all parts of the motor enclosures—frame, end shields, and conduit boxes—are cast iron. Also, the leads are permanently encased in compound in a cast-in pocket in the stator frame, to prevent liquids from seeping into the motor. Further protection is provided by a rotating labyrinth seal to prevent dirt, oil, or water from entering the bearing housing. The motors are wound with Formex wire.

◆

### New Gearmotors

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa., have announced a new line of horizontal parallel shaft type gearmotors to meet speed reduction requirements for a wide variety of industrial application over a range of 1 to 75-hp. Each new unit conforms to A.G.M.A. standard output speeds and application practices.

The use of adaptor castings between motor and mechanical parts allows the use of all standard N.E.M.A. frame motors with each type of unit, and types of motor construction can therefore be readily changed to suit vary-



ing service conditions if necessary in the field. The design of the motor-adaptor assembly being common between unit types, such assembly can be readily shifted between unit types to meet changes in speed requirements.

Gears and pinions in the new gearmotors are of .40-.50 carbon steel, and are given special heat-treatment before hobbing. This process, it is explained, produces a tapering hardness from surface to core. Gears and bearings are lubricated by a positive splash system, and new case design allows oil to circulate freely at all times.

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### Patents to Carolinians

According to Paul B. Eaton, patent attorney, Charlotte, N. C., recent patents to Carolinians included the following:

John O. Lee and Allen C. Campfield, of Swannanoa, N. C., were awarded a patent on a pattern mechanism for Jacquard looms in which retractable pins feed the pattern, and these pins are automatically withdrawn to present the pattern card being read against a flat surface. Then the pins again raise the pattern from contact with the feeding cylinder together with cam action for shedding the pattern cards from the pins.

# Comfort at 50° below in Arctic Shelter Tents

Repairing a damaged fighter plane at 50° below . . .

In Arctic shelter tents made by the Textile Industry, men of the Army Air Corps work in comfort to "keep 'em flying."

These portable structures consist of quilt-like sections of flame-proof muslin and water-proof cotton.

An outfit constantly on the move appreciates the small shipping space required, the comfortable temperature maintained, and the short time it takes to erect these shelters.

The Textile Industry produces millions of yards of cloth daily so our soldiers can do their work well—regardless of climate.

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**of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.**

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In the Wet End of Textile Finishing, Butterworth Machines are working day and night—bleaching, boiling out, drying, calendering, dyeing.

The cooperation of Butterworth Engineers is freely offered to mills seeking to achieve increased productive efficiency . . . or to repair or replace worn-out or obsolete equipment.

All of our facilities not required for Ordnance production are available to help you solve your finishing problem . . . Let us serve you now.

H. W. BUTTERWORTH & SONS CO.
Phila., Pa. Serving the Textile Industry since 1820
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**Butterworth**

**PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY**

William H. Fowler, of East Marion, N. C., was granted a patent on a grease pan adapted to be removably secured to the frame of a loom, and to be disposed beneath the pick cam to prevent grease from the pick cam from dropping on the floor, and at the same time leaving space between the pan and the floor to allow cleaning of the floor beneath the pan.

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### Special Roll for Re-Winding Gauze

Rodney Hunt Machine Co., Orange, Mass., have developed and built an unusual roll for re-winding lengths of surgical gauze for a Connecticut manufacturer with orders for bandages for the armed forces. The 84-inch diameter drum operates as a self-contained unit. The roll, 42 inches wide, is held in a stand and operated by a motor geared to the desired speed.

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### Aridye Announces New Flameproof Camouflage Colors

Aridye Corp., 75 Varick St., New York City, has announced CFP colors for flameproof camouflage netting to meet all the requirements of the Engineer Corps for flameproofed camouflage shrimp netting. These special flameproof colors are available in two shades, CFP Sand No. 3 and CFP Olive Drab No. 9. Comparative tests have proved that the best results are obtained when the colors are applied in an all-solvent solution. However, it is explained, equally successful results can be obtained with a water-in-oil emulsion if the available drying equipment provides some means of compensating for shrinkage of the fabric. Removal of solvent vapors is necessary with any mixture containing even a small percentage of solvent.

The CFP colors may be applied in a variety of ways, depending on the equipment available. In general, what is desired is a means of impregnating the fabric and removing the excess liquor, followed by a drying operation. In view of the construction of these fabrics, precautions should be taken to avoid distortion of the net construction during processing.

# TIMELY NEWS ITEMS with a TEXTILE SLANT

**Donald H. Powers**, for the past 12 years with **Rohm & Haas Co.**, Philadelphia, has joined the Merrimac Division of **Monsanto Chemical Co.**, Everett, Mass., as specialist on applications of all Monsanto chemicals in the textile industry. Dr. Powers, after receiving his Ph.D. in 1924 at Princeton, was with the du Pont research department for four years; later was with U. S. Finishing Company, as consultant and chief chemist; and joined Rohm & Haas in 1931 in charge of the textile division handling sales and research for textile chemicals. His research has specialized in the application of resins to textiles and enzyme applications.

Dr. Powers

**Industrial Canvas Products Corp.**, South Bend, Ind., has added **James B. Ball** to its executive staff, as director of product development, as a part of its preparation for the post-war period.

**Proctor & Gamble Distributing Co.** has announced the appointment of **W. L. Pontius** as representative of its bulk soap department in North and South Carolina, with headquarters at 2119 Brierwood Road, Charlotte, N. C. He has been with the company for 16 years and has recently been representative in the Pittsburgh territory.

**Garlan Morse** is in charge of a new sales office of **Sylvania Electric Products, Inc.**, in the Lincoln-Liberty Building, Philadelphia, Pa.

**Albany Felt Company**, Albany, N. Y., has appointed **C. M. Littlejohn, Jr.**, of Charlotte, N. C., to represent them in the South. He is a graduate of N. C. State College. He will cover Georgia and Alabama in addition to the Carolinas.

**Walter S. Landis**, vice-president of the **American Cyanamid Company**, was awarded the gold medal of the American Institute of Chemists in May for his contributions to chemical engineering and development work, largely in the field of nitrogen derivatives, as well as his services to the professional side of chemistry.

**Dr. Robert V. Yohe**, technical superintendent of the chemical division, **The B. F. Goodrich Co.**, Akron, Ohio, has been named plant manager of the government synthetic rubber plant operated by Goodrich in Kentucky.

**H. B. Bradford** has been made general manager of the American Moistening Company, Providence, R. I., succeeding the late **Fred J. Orme**, who passed away in May. Mr. Bradford has been with the company for a number of years, in charge of the Boston office.

**Leigh Willard**, once an Allis-Chalmers draftsman, has been elected a director of Allis-Chalmers Mfg. Co., Milwaukee, Wis. He fills the vacancy left on the board by the death of **Max W. Babb**.

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## New Publications of Textile Interest

**Red-Ray Mfg. Company**, 455 West 45th St., New York City. A folder, "Infra Red-Ray Radiant Burner for Singeing", giving details on the application of this technique to textile singeing equipment.

**Proctor & Schwartz, Inc.**, 7th St. and Tabor Road, Philadelphia, Pa. "Proctor Textile Machinery", a comprehensive bulletin giving illustrations and brief descriptions of the new models of some of the more general types of Proctor Textile Machinery.

**Leeds & Northrup Co.**, 4934 Stenton Ave., Philadelphia, Pa. Catalog N-33-163, "Micromax Temperature Instruments for the Steam Plant", describing temperature recorders for use with thermocouples or with thermohm resistance thermometer bulbs; applications to temperature measurement of steam, feedwater and cooling water, and to fuel, combustion air and flue gas, are described.

**Mine Safety Appliances Co.**, Pittsburgh, Pa. A 32-page handbook, "How to Make Your Safety Equipment Last Longer", giving practical "do's and don't's" for safety equipment care for key personnel.

**Reeves Pulley Company**, Columbus, Ind., Catalog TR-432, "Reeves Variable Speed Transmission with Built-In Reducer".

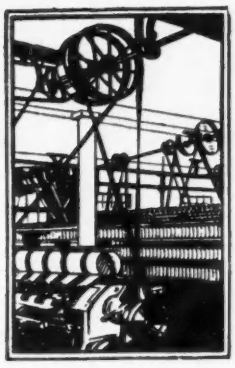
**Calco Chemical Division**, American Cyanamid Co., Bound Brook, N. J. "Dyeing of War Aid Olive Drab Worsted Knitting Yarn", Bulletin No. 679, covering Quartermaster specifications PQD-250A, 251B and 253A, with the fastness requirements and dyeing procedures by top and meta chrome methods.

**Hough Shade Corp.**, Janesville, Wis. Bulletins No. 151 and No. 152, illustrated installation sheets on the use of Ra-Tox wood slat industrial shades to guard against production losses and worker fatigue due to sun glare, sun heat, and draft.

**Westinghouse Elec. & Mfg. Co.**, East Pittsburgh, Pa. A 12-page booklet describing brazing with phos-copper, for use with gas, incandescent carbon, electric furnace and dip brazing methods.

**The Bristol Company**, Waterbury, Conn. Bulletin No. A-112, describing a line of new convertible free-vane air-operated controllers; also information on converting from one type to another.

**Hyatt Bearings Division**, General Motors Corporation, Harrison, N. J. A 96-page "Engineering Handbook", prepared as a general reference book for engineers and designers as an aid in determining the loads occurring on roller bearings employed in industrial and automotive applications.



# DIAMOND

*Waterproof*

## LEATHER BELTING

Schachner Diamond S construction gives distinct power transmission advantages in addition to recognized features of the ordinary oak tanned leather belting.

1. Delivers positive horse power.
2. Closer contact on heavy crown.
3. Longer, trouble free service, minimum stretch.
4. Meets high speed production demands

**Schachner Diamond S Endless Licker-in Drive is guaranteed against stretch, which reduces slippage to a minimum and affords maximum production at the lowest possible cost. Fastener troubles are completely eliminated.**

## SCHACHNER LEATHER & BELTING COMPANY

**CHARLOTTE, N. C.**

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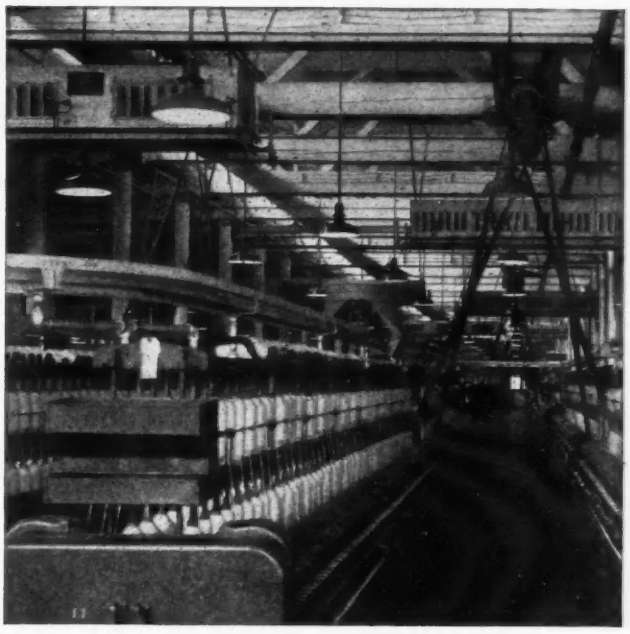


## What do you expect of

# Certified Climate?

Are you figuring on stepping up your machine operating speeds?

Do you expect to benefit by higher and more dependable REGAINS; more uniform numbers, of greater strength, smoother and more compact drafting; less waste and fly?

Or — even without an increase in operating speeds, do you figure that fewer stops, fewer piecings, fewer seconds will step up production?

**Textile Air Conditioning results most satisfactorily when production men and Certified Climate engineers work together as partners.**

## Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

# PERSONAL NOTES
## *About Men You Know*

M. EARL HEARD has resigned as dean of the Philadelphia Textile Institute, Philadelphia, Pa., to become effective June 15, director of research of the West Point Mfg. Company, with headquarters at West Point, Ga. Mr. Heard, who has headed the Philadelphia school for three years, was born in Lanett, Ala., and received his first textile experience in the Lanett mill of the organization he now joins. Though leaving Philadelphia, he was made a member of the board of governors of the Institute.

H. KENDAL DICK has been commissioned a second lieutenant in the Army Air Forces after an intensive course in meteorology taught at New York University's College of Engineering under the direction of the Army Air Forces Technical Training Command. Lieutenant Dick, who was admitted to advanced meteorology training because of his college background of mathematics and physics, was graduated from Lowell Textile Institute in 1939. Before his enlistment in June 1942, he was with the Celanese Corporation of America at Narrows, Va.

WILLIAM N. BANKS, of Grantville, Ga., has been elected chairman of the board of directors of The Cotton-Textile Institute, Inc., succeeding GOLDTHWAITE H. DORR, who resigned some time ago to become special assistant to the Secretary of War and representative of the War Department on the Manpower Commission. Mr. Banks is a former president of the American Cotton Manufacturers Association. He is president of the Grantville (Ga.) Mills.

RICHARD RALPH, at one time with Lawrence Mfg. Co. and Ipswich Mills, Inc., and for the past four years assistant superintendent of E-Z Mills, Inc., Bennington, Vt., is now superintendent of that underwear manufacturing plant, according to H. C. GATES, general manager.

CHESTER L. EDDY, formerly with Renfrew Bleachery, Traveler's Rest, S. C., and more recently with Arnold, Hoffman & Co., and Augusta Chemical Co., has become plant manager of the Narragansett Finishing Co., Westerly, R. I.

E. J. BLACK, formerly overseer of weaving at the Corsicana Cotton Mills, Corsicana, Texas, has become superintendent at the Gonzales Cotton Mill, Gonzales, Texas, where BASIL GIBSON is manager.

CARL D. WELCH has become general overseer of carding, Mill No. 2, Phenix Mills, Kings Mountain, N. C. He was formerly assistant superintendent at the York Mill No. 1, York, S. C.

E. S. BENNETT has been promoted from assistant superintendent to superintendent of The Dallas Mfg. Company, Huntsville, Ala., succeeding the late W. L. DENHAM.

DANIEL NIEDERMAN has been elected assistant secretary of Century Ribbon Mills, Inc., with offices at 6th Ave. and 40th St., New York City, and mills in six Pennsylvania cities.

**Joseph E. Sampson**, of Guilford College, N. C., was awarded the medal given annually by the National Association of Cotton Manufacturers to the most proficient textile student in the graduating class at the textile school of N. C. State College. **Sidney Garfinkel**, of Flushing, Long Island, N. Y., received the cup given annually by Sigma Tau Sigma, textile honor society, to the textile senior at the college with the highest four-year scholastic average. **Robert I. Dalton, Jr.**, of Charlotte, N. C., was the winner of the Phi Psi award to the outstanding senior qualifying on a point system including scholastic standing, leadership, personality, initiative, loyalty and courtesy.

J. M. GASTON has resigned as overseer of spinning at Eagle & Phenix Mills, Columbus, Ga., to accept a similar position at Brighton Mills, Inc., Shannon, Ga.

JOHN P. MCGLINN has become secretary and general manager of the Northmount Hosiery Corp., Reading, Pa., succeeding C. HUNTER BIEHL, resigned.

L. C. WORLEY, who has been working at the Panama City (Fla.) Shipyards, has become overseer of carding at the Geneva (Ala.) Cotton Mill.

A. R. HALLER is now superintendent of Warren Woolen Co., Stafford Springs, Conn., succeeding MAX MERKEL, resigned.

HUGH GIVEN, of Rome, Ga., has been elected president of the Summerville Mfg. Company, at Summerville, Ga.

### Obituary

CLARENCE B. THOMASON, 65, representative of Ashworth Bros., died at his home in Charlotte, N. C., on April 22. He had been connected with the Ashworth firm for more than 30 years.

ARTHUR W. GOSS, 65, instructor in carding and spinning at the Bradford Durfee Textile School, Fall River, Mass., for the past 33 years, died in May.

JOHN P. SUTTON, 37, personnel director of Woodside Cotton Mills Co., Greenville, S. C., passed away on May 10, following an illness of two months.

CHARLES O. DEXTER, 80, successively agent, clerk, and director, of the Beacon Mfg. Co., New Bedford, Mass., and Swannanoa, N. C., died recently.

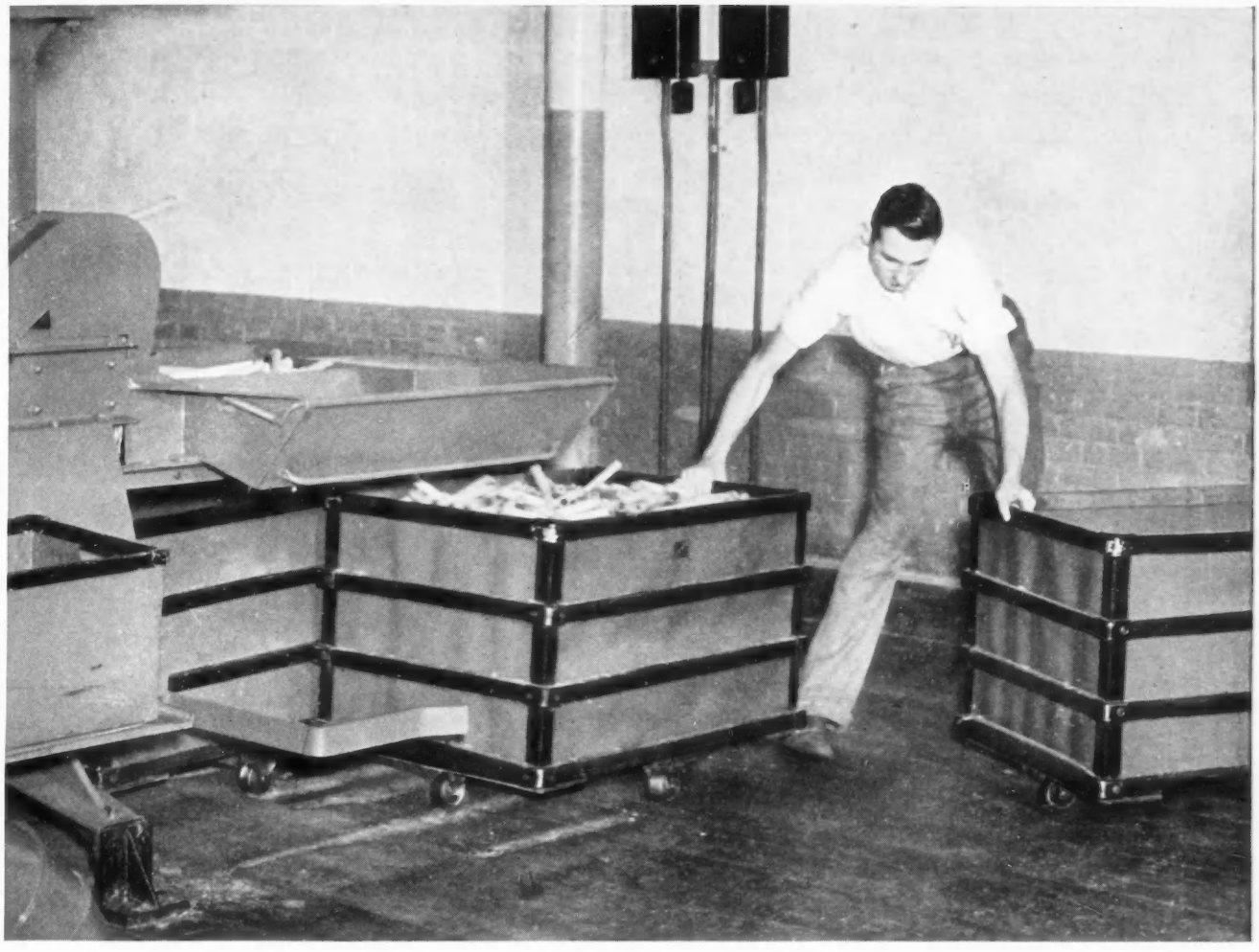
W. L. DENHAM, superintendent of The Dallas Mfg. Company, Huntsville, Ala., passed away in May following an illness due to a heart attack.

ARTHUR E. MASON, 78, treasurer of the former Hamilton Woolen Co., Southbridge, Mass., died suddenly on April 28.

JAMES H. WAGNER, 82, president of Crown Knitting Mills, Inc., Mohrsville, Pa., died suddenly on April 28.

JOHN A. POOLER, for 14 years overseer of carding at the Ware (Mass.) Woolen Mills, died recently.

SIMON S. SELIG, 64, president of the Selig Company, Atlanta, Ga., died on May 10.



# Time-Savers for Bobbin-Handling

EACH Barber-Colman Automatic Spooler has a sorting table to which empty bobbins, tailings, and strips from the pockets are delivered automatically by a conveyor. This table is large enough so that the spooler girl can easily and quickly pick out the tailings and strips. It is at convenient working height so no stooping is necessary. Having picked out all bobbins that can be re-run, she opens a flap on the front of the table and the empties slide into a large bobbin truck set under the table. When this truck is full, it can be quickly pulled out and an empty one put in its place. The truck full of empty bobbins is sent to the spinning room. These may seem like small details to be talking about, but they are typical of many features of Barber-Colman Automatic Spoolers—features which add to convenience, saving of effort, saving of time, and increased production—features which make Barber-Colman equipment valuable for producing more and better war goods, faster.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

**BARBER-COLMAN COMPANY**

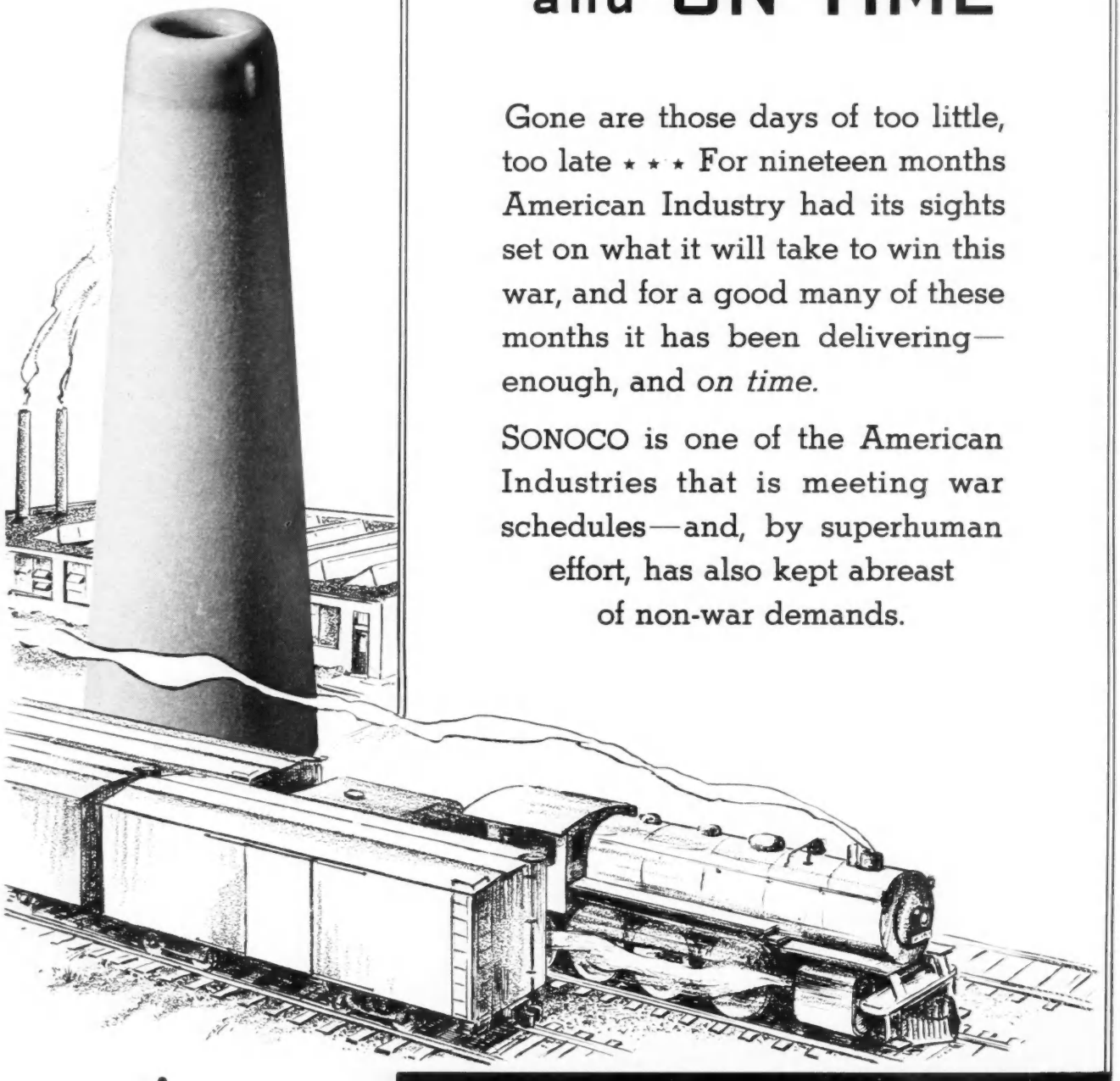
ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

# ENOUGH
## and ON TIME

Gone are those days of too little, too late ★ ★ ★ For nineteen months American Industry had its sights set on what it will take to win this war, and for a good many of these months it has been delivering—enough, and *on time.*

SONOCO is one of the American Industries that is meeting war schedules—and, by superhuman effort, has also kept abreast of non-war demands.



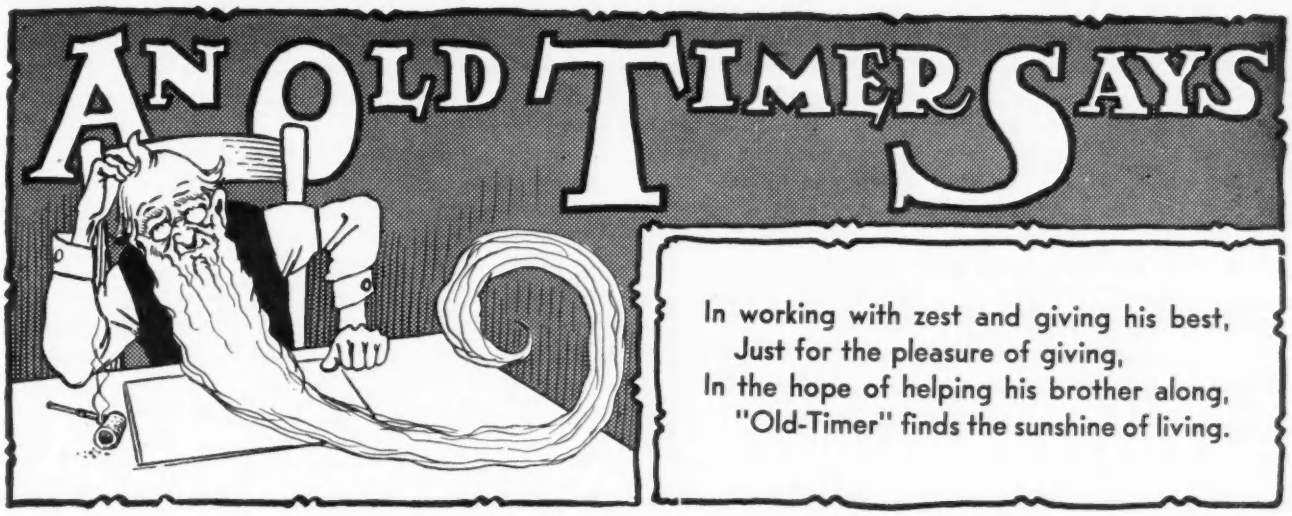
SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

**SONOCO PRODUCTS COMPANY**

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

**DEPENDABLE SOURCE OF SUPPLY**

SONOCO SERVES THE WORLD
PAPER CARRIERS


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

# Perfect???

LITERALLY speaking, there ain't no such animal.

That is, there is nothing perfect. At least OLD-TIMER has never had the experience of seeing anything about a textile mill or its management that is perfect. And we have seen some pretty nice running plants in our time.

Recently (April issue) we told you of a new weave room that was the apple of the superintendent's eye, and it certainly was a beauty. The finest looms we have ever seen. The warps were without loose ends or crosses behind the four-bank drop wires. The sizing felt like it was "just right"—very little shedding to be noticed. Very few filling pieces in the cans—and the quills were uniformly filled to the top. Weavers seemed to be kind of waiting around for a loom to stop. Battery hands were about the only people who looked like they had any work to do. As we stood there admiring the wonderful sight that word "Perfect" was the only word OLD-TIMER could think of to properly describe the sight. That night after retiring, OLD-TIMER could still see that beautiful weave room with all the looms "knocking it off" at a speed which only a few years ago would have been impracticable, yes, impossible, and as OLD-TIMER was about to drop off to sleep that word "Perfect" again came to mind.

Hell, no, it's not perfect. We can find numerous things in that weave room which are not perfect, things that can be improved upon. . . .

Wide awake now, we switched on the light, got out the old note-book and began to make notes. (A note to readers who have been reading OLD-TIMER'S page for several years: Probably you have wondered sometimes where ideas came from to enable OLD-TIMER to have this page before you for more than 20 years. Well, he has given you here an illustration. The foregoing was the inspiration from which came the *one*-word title of this article—"Perfect".)

No, gentlemen, "there ain't no such animal." We have never seen the perfect loom, spinning frame, fly frame, card or picker. Neither have we ever seen the perfect manager, superintendent, overseer, assistant overseer or section man. Well, you naturally say, what of it? What is OLD-TIMER leading up to anyway? Just this, fellows. After seeing that wonderful weave room, a weave room that would please any mill man; after that thrill, we began to get more serious in our thoughts and to give more practical consideration to the problems of overseers and superintendents and to textile machinery, with a final conclusion that none of us realizes today what wonderful opportunities are hanging right in front of our eyes waiting for some smart guy to pick them off.

We believe that all overseers and superintendents should keep constantly in mind that we are far from perfect. We are prone to say to ourselves, "The old job is running along pretty well; the boss is pleased and I don't know of anyone beating what we are doing." Does that sound a little familiar to you, brother? Well, it's dangerous, darn dangerous. Instead of "coasting" when the boss is pleased, sound judgment should whisper in our ears, "Now is the time to work that old noodle. If the job is going nicely that will give us more time to concentrate on finding some way to improve something."

When have you casually stopped by to chat with the new employee that you do not know very well—to ask him where he is from—how so-and-so was done at that mill—how he liked the overseer or superintendent? You may get some idea as to what kind of a fellow he is by the way he talks about the management where he formerly worked, and, besides, you are classifying that new operative in your subconscious mind. You are also making some kind of an impression on him. He is going to form an opinion of you which may or may not be of help to you as long as he stays in your employ.

Yes, if your job is running along nicely, in fact, pretty near what you think that word "Perfect" means, take advantage of the spare time it gives you to do something you have not done before. Get a new slant on something. Just remember that somebody is going to come out with a new idea, so why not let it be you?

Are your section men functioning just as you would like them to? Are they running their sections

like you ran a section? You evidently ran a section better than the other men you were working with, or did something to gain promotion. What efforts are you making to teach each one of your section men to be as good as you were? Very likely you have one man, or probably two or three section men, far ahead of the others. Have you ever considered having one of these outstanding section men stay with some of the weak men a few days to show them how he gets along with less work than they do?

How about asking section men to simply make a mark on a pad carried in the pocket, for every job they do (mechanical job) for a couple of weeks and ask them to turn those records in to you, without signing their names? You will probably be surprised to find some of them are having 25 per cent to 50 per cent more jobs than the others. Now start a system to find out why, and give all the men the benefit of your findings. Next, have the men classify the jobs they have for a couple of weeks. Here, again, you will find that some have double the amount of jobs on *one* item compared with what the other men have done.

OLD-TIMER has found some men who always had to return to a loom, where they had installed a new shuttle, once or twice, while others did not. Other men would have double the warp stop motion jobs that some of the others had. And he has had section men who would spend three times the amount of time to plumb a spindle that other section men would. When changing draft or twist gears some section men do not have a job behind them, while others may have several. And, brother, unless you have a set of section men who are "Perfect", some of them belong in the classification we have been describing. Therefore, you have plenty to do and always will have, matters not how nearly Perfect your job is running.

Yeah, fellows, there are so many things you can improve upon that if you start to look around you will soon find so many things to do you will surprise yourself—some of them so simple, too. For example, OLD-TIMER saw something in that weave room he almost wanted to call Perfect. That takes the glamour off, somewhat, of the build-up we gave you on that weave room, but as some of the defects are so simple you wonder how they could exist in a well-managed plant. We rather reluctantly tell you that we happened to see a man taking off cloth and after pulling at the stuck cloth roll for several minutes—no, he did not have a spare cloth roll with him—he had to go to the cloth truck to get one. Yes, in the meantime, the loom was standing. Perfect? Hell, No! And, if you are inclined to think this is an exaggerated illustration, all OLD-TIMER can say is: Look around, brother. Look around.

We believe the average overseer or superintendent would be greatly surprised to know the many simple questions most men cannot answer about their jobs. The fact is, sometimes we wonder how some men are so successful, apparently, and at the same time know so little about the details of their jobs. While visiting a number of mills this past summer and fall this fact was forcibly impressed upon us by a little incident which happened while talking to a superintendent friend just as he received orders from the office to change 550 looms from one style of goods to another. But, before relating this conversation with our friend, let me suggest that you write down about half a dozen simple questions in your note-book, and every time you are in conversation with a brother overseer or superintendent ask him those questions and see how many can answer all of them. For example, we find many weaving overseers who will look at you as if to say, "What the hell", if you ask them what roving their warp or filling is made of or if you ask the carder what numbers of yarn their 68x72 is made of or how many looms to the weaver. Hold on now, before you say OLD-TIMER is stretching the information a carder should have about the weave room or the information the weaver should have about the card room. Because, if you have been following OLD-TIMER all these years, you already know the answer, and if you are a new reader of this page, we will explain first: OLD-TIMER's overseers always knew all these details about all the departments in the mill. His carder was taken to a weaver two or three times per year and told to stay in the weave room for two or three days, except at starting time or changing time, and for the overseer of weaving to give him all information concerning each style of goods he was making, such as production per loom per week—in yards and pounds—numbers of warp and filling—looms per weaver—percentage of size—contraction, both warp and filling—reed being used, and all other details about each style of goods being made.

OLD-TIMER has always worked with his men on the theory that the more each overseer knows about every department of the mill the more efficient those men will be. We have often made this illustration to our department heads: Suppose you were permitted to pay section men overseers' pay and that you could thereby employ the best overseers you could find to run your sections, is there any doubt in your mind but what you would have an organization which would and could get the highest production at the minimum cost? Certainly, you say; any "boob" should know that, but such an illustration is not possible. Yes, OLD-TIMER agrees that it is not possible, but it *is* possible to have a training system for your section men which will raise their efficiency nearer to that of overseers than they are now. And, by the same reasoning, a superintendent or manager can raise the efficiency of all his overseers by teaching them the duties of a superintendent, and one of the steps toward that goal is to give each overseer the benefit of knowing all the details of all the departments in the mill.

Often OLD-TIMER takes the carder along on a trip through the spinning and weaving, and the other overseers through all the departments. We stop and talk to the overseer in each department—ask him what he has to complain about and what he has to suggest about improving the yarns and the bad work, the seconds, the management of the help, and, in fact, all the things that come under the duties of a superintendent. Some good suggestions pertaining to the weave room often come from the carder or spinner, and vice versa.

Most of our readers know about a little book COTTON puts out called "My Private Secretary". If you haven't seen one you should write the editor to see if you can secure one. They may all be gone. That little book was gotten out to help all overseers to pre-

pare themselves to be superintendents. For example, if the weaver has one of the books and the carder has one, the weaver fills in all the details about every style of goods being woven at that mill; the carder fills in all the information about drafts, hank roving, speeds, roll settings, card settings, etc., etc. Now these two men exchange books. The weaver fills in all the weaving information in the carder's book; the carder fills in all the carding information in the weaver's book. The spinning room information is obtained in the same way. Now each overseer has *all* of the details of carding, spinning and weaving of every style of goods in the mill. Tell me that does not raise the efficiency of all the overseers!

The foregoing is only one illustration to give you the idea, on which you can elaborate.

Mr. Superintendent or Manager: Make every overseer a superintendent. Mr. Overseer, make every section man an overseer, and you will all profit by the co-operation. Long ago we have learned that to "hide your light under a bushel" is a bad policy.

Now to get back to telling you about the incident concerning my superintendent friend getting the order to change 550 looms off of 72x76—39-inch 4.25-yard goods to 68x72—39-inch 4.75-yard goods. Let me digress from the subject a moment to tell you that OLD-TIMER is sitting here talking to you, in preparing this article, where he can see the crowds lolling in the sun on the beach (in Florida) and it is a heck of a temptation to be out there with the crowd, but you know when the whistle blows we cotton mill fellows have "gotta" go, and my editor blew that old whistle with an air mail letter yesterday to tell OLD-TIMER he was behind with his work and to get busy pronto, or else. I guess that "else" means "fired", and as we have never been fired by the editor but once, we are just looking at that crowd on the beach once in a while and trying to get this message off to you in time to meet the editor's "dead line". And, by the way, are you an old enough reader of OLD-TIMER to remember that time the OLD-TIMER page came out with only one word on the page, and that word was "Fired!"? Anyway we had a lot of fun over the incident. A bunch of OLD-TIMER readers took his side and others took the editor's side and we all wound up by shaking hands, with everybody happy.

*(OLD-TIMER got strung out in this discussion and we simply didn't have space to run it all in this issue. It will be continued next month, so please save each installment so you will have the full story.)*

# The Care of Cotton Card Traverse Grinders

**By Jack Roy**

**B. S. Roy & Son Co.**

WHEN running accurately and freely, the traverse grinders can be as beneficial to the carding process as anything this vital process encounters. With these machines, as well as with any machines requiring lubrication, the thought to keep in mind is that *oil is cheaper than bearings.*

There can be no set rule for the cleaning and proper oiling of traverse grinders as card room conditions vary considerably. However, it is imperative that the following suggestions be carried out in part or in full to obtain the best possible results for each individual set-up.

1. Traverse grinders should be kept (covered) in substantial racks especially made for them when not in use.

2. The shell and traverse screw should be kept clean and should be covered with a light film of oil at all times. The traverse screw bearings (which can be reached through holes on each end of the shell) should be oiled regularly. A certain amount of emery which gets into the traverse screw and onto the shell while the grinder is in operation must be continually cleaned off, as emery and oil do not make a good bearing surface. Changing the felt cleaners and oilers on each side of the traverse wheel as soon as they become gritty or worn is an economical way of keeping the shell clean and oiled.

3. When new emery filleting is applied, the shell should be wrapped at least a foot on each side of the traverse wheel to keep emery particles away from the shell and screw. If the wheel is rolled with a flat board after covering, much of the loose emery will be thrown off, and the remainder evened up before the grinder is put back into operation.

4. As different-make grinders require different parts, great care should be exercised in equipping each machine with the correct parts. Samples of worn parts should be submitted, when they are available, to a reputable traverse grinder manufacturer for replacement.

5. Should grinders be equipped with the new-type differential head, the oil in these sealed housings should be checked occasionally, changed after about every 1,000 hours of running and never allowed to get above the oil-level plug, as too much oil generates considerable heat which is detrimental to the proper operation of these differentials. When set up on a grinder they should be given all the end play possible (obtained by first locking one set-screw and then centering the motion before locking the other).

A continual checking, cleaning and oiling of traverse grinders should insure up to seven years of good service between repairs or replacements.

### Have You Good Judgment?

Good judgment is based on the ability to think before you make decisions or act. Considering all sides of a subject in advance of a decision safeguards you against the danger of making snap judgments. If the decisions you make are not logical and sound, you cannot long hold the confidence of your workers.

The basis for sound and correct decisions is a thorough knowledge of all the facts relating to the problem, plus your accumulated knowledge of the policies of your management and previous decisions of your superiors.

# Because WE ARE DOING More TESTING ...EACH TEST COSTS YOU Less!

Over the past several years our volume of testing has been increasing steadily. The war has a lot to do with that, naturally. But aside from the war, the idea of testing has become more and more important to progressive industry . . . more firms are employing testing than ever before. ★ Today our tremendous facilities . . . our extensive scientific equipment . . . and our large staffs of trained technicians are busy from morning till night. And as our volume increases, we are able to effect important savings, real economies, which reduce the unit cost of each test. ★ These savings we are passing along to you in the form of reduced costs on all tests. We therefore extend an invitation to even more firms to take advantage of these lower costs and institute testing programs for today and the markets of tomorrow.

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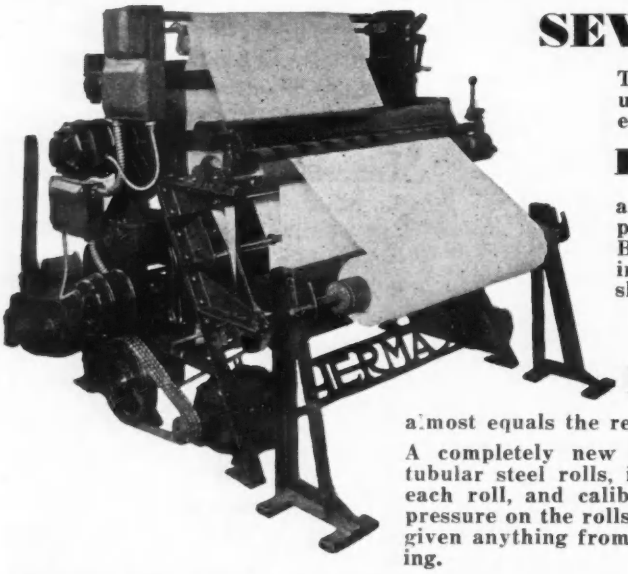
# OF THE LAST NINE HERMAS SHEARS SOLD SEVEN WERE RE-ORDERS




**These seven new Hermas shears were sold to mills that had used these shears long enough to find them superior to any ever before put on the market.**

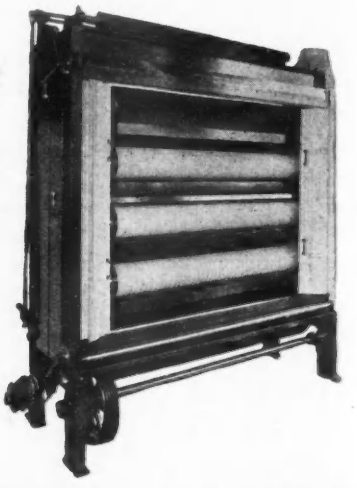
## Features of These New Shears

**are individual motors on each rotor, and a much improved method of bringing the cloth to the knives. Both sides and both selvages of the cloth are sheared in a single operation. Shears all types of cloth from sheer fabrics to heavy duck.**

## The New Hermas Brush

**almost equals the record set by the new shear.**

**A completely new design, with vibrationless tubular steel rolls, individual suction hood on each roll, and calibrated controls which vary pressure on the rolls so that a uniform finish be given anything from heavy duck to light sheeting.**



## HERMAS MACHINE COMPANY

*America's Only Exclusive Specialists in Clothroom Equipment*

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Carolina Specialty Company, Charlotte, N. C.
Roberto Zander, Buenos Aires, Argentina
Unisel, Ltd., Manchester, England

# HOW OTHER MEN MANAGE

## Effect of Doublings on Breaking Strength

EDITOR COTTON:

Since the Government has been putting out such strict breaking strength specifications for various fabrics, we believe the mills are more strength-conscious than they have been for a long time. We think it would be interesting for your magazine to find out how many mills are able to get Draper's old standard breaking strength; also, how many are getting the new Draper standard breaking strength on their warp yarn; and from those who are able to get it, find out what grade and staple cotton they are running, and how many doublings they have through the card room, and whether they are using double creel spinning or not, and whether they are using old style drafting or long drafting.

We are particularly interested in getting some information along this line. We find that we have had to purchase 1 1/32-inch cotton in order to get Draper's new standard with single creel on our spinning. We have very few doublings in our mill; in fact, only 24 all told. I can remember when we had at this mill 2,000 doublings, and I think most mills have reduced doublings in recent years, and I am wondering if they are still able to get Draper's standard breaking strength.

I would appreciate it if some of your readers would discuss this subject in various aspects, giving us the benefit of their experience on the specific points mentioned as well as their views on the subject generally.

CONTRIBUTOR NO. 7444

## Different Length Picker Laps

EDITOR COTTON:

The following discussion as to causes of variation in picker lap length may be of interest in connection with the question you published from "CONTRIBUTOR NO. 7415" on this subject. He said, on page 124 of your April issue, that he is having trouble wtih his pickers making different length laps. He said his pickers have the new style chain drive, and that the laps are measured on a lap meter.

The usual cause of variation in the length of picker laps is due to the use of the old-fashioned cam knock-off. This cam knock-off made one revolution during the forming of a lap, and when much wear had occurred in the bearings of the device and when the drop lever and its latch had become worn and rounded at the points of contact, there would be a considerable variation in lap length. If pickers are equipped with the hunting tooth or instantaneous knock-off, this knock-off will measure the laps with an accuracy of less than a quarter of an inch variation in a 50-yard lap, so you can readily see that there is no possibility of error due to the stop motion.

Another cause of lap variation is the sticking of the rollers in the calender racks. The calender rack is so designed that it provides a straight pull against the rack gear which restrains it, but if the rollers in the calender racks are sticky, the turning lap pin asserts a thrust backward toward the picker which causes the calender rack to jam against the shoes that hold them in place, and this causes a great deal of friction which often results in breaking the calender racks. Naturally, a pressure sufficient to break a calender rack has a tendency to stretch the lap which is supported between the two fluted calender rolls. Furthermore, the fluted calender roll must assert enough tangential pressure on the lap to cause it to turn, and if the lap pin is rubbing on stuck rollers, it is necessary for the fluted rollers to assert quite a bit of pull on the lap, and this results in stretching the surface of the lap appreciably. The greater the pressure on the lap, the more stretching you get from these two causes.

If the mill has anti-friction rollers in the calender racks on the pickers, they should not have any trouble from this source.

Another cause of lap variation would be due to differences in the diameters of the calender rolls. It often happens that a mill will take its calender rolls out and turn a small amount off of them to get rid of traveler cuts and other scars on the rolls. Any change in the diameters of these calender rolls will cause a variation in the lap lengths.

Sometimes a mill will take the fluted rolls out and turn them down slightly and re-flute them. This is certain to make a difference in the length of the lap, and will usually make the lap noticeably puffy, because the fluted rolls take the cotton away slower than the vertical rolls deliver it. A mill with old pickers will sometimes have certain machines on which the calender rolls have been tampered with, and unless all of the rolls have been treated equally, there could be a variation between the laps made on the different machines.

I do not think that the use of the chain drive would have the slightest possible effect on the length of the lap in a mill where the doffing was done promptly. Of course, in a small mill where the picker tender may be doing other work and might let his lap run a minute or two after the picker knocks off, you would get a certain amount of stretching. In a large mill where the doffing necessarily has to be done promptly and in regular rotation, I do not think there could possibly be enough stretching between the stoppage of the lap and the doff to have any de-

terminable effect on the lap length.

Where the chain drive is used, you must employ very careful doffing because the picker no longer automatically breaks the lap, and the man who doffs the machine has to break this lap when he takes it off of the picker. If this man is overloaded or if he is careless, he could easily cause a variation in the lap length merely by failure to break the lap evenly at the compression roll when he doffed. There could easily be a variation of a foot, or perhaps a little more than a foot, in the point at which the doffer would break his lap when lifting it off of the calender. This could, perhaps, be at the root of the trouble mentioned. I think the reason the Kitson picker was so designed as to keep the fluted calender rolls running was to positively break the lap at the same point on each doff.

CONTRIBUTOR No. 7418

# Causes of Loom Slamming

## By B. H. Hawkins

RECENTLY we received the following question for B. H. Hawkins, the author of the series of articles "Methods of Fixing Looms", which appeared originally in the pages of COTTON and later were reprinted as a booklet under this same title. The inquirer is connected with a mill operating Draper looms, so it is assumed that his questions refer to that type of equipment. He wrote:

"After reading Mr. Hawkins' articles entitled 'Methods of Fixing Looms', I would like for him to cover for me as fully as possible his ways of preventing excess stoppage due to slamming and stopping off. Any rules he can supply concerning the picking motions and 'slide bar' stop off motions would be greatly appreciated."

Mr. Hawkins has replied to this inquiry as follows:

In order to answer this question fully, and give the rules concerning the setting for the "slide bar" stop off motion, it would be necessary to know the model, number of the sliding bar stop motion, number of the knock-off motion in his particular looms, and whether the loom is fitted with a loose or tight pulley arrangement or individual motor drive. I would advise him to write to Draper Corporation, Hopedale, Mass., for setting instruction sheets applicable to his looms. These sheets give the complete settings. I would have to write a book almost to cover all types, a great deal of which would be wasted.

It is impossible to try to discuss or even to list all of the things that could cause a loom to slam off. If the slamming off is general throughout the weave room and is causing an excessive number of loom stops, it may be that the looms are out of line from some cause or another. For instance, the reeds may be turned over occasionally by the drawing-in hand when the warp is being hand-drawn. This frequently happens and it makes the shuttle box incorrectly as the box back and reed will then fly out of line. I wonder if this man follows a policy of having the lining of the loom checked when a new shuttle is installed?

Assuming the loom is lined properly, we might list the following things that could be checked to reduce slamming:

1. Setting and condition of parts of picking motion.
2. Timing and setting of the harness.
3. Condition and correct setting of the parts of the protector motion.
4. Boxing of shuttle.
5. Uniform and correct humidity.

Since he asked particularly about the picking motion, I will discuss it briefly.

To set the picking motion on an E-Model loom:

1. Turn the loom crank shaft to top center.
2. Set the cam so that the pick ball rests in the hollow or low part of the cam. (Any movement of the crank shaft toward back center should cause the pick ball to start rising.)
3. Adjust the power strap to standard height on the picker stick. (On 36-40-inch E-Model looms, the bottom of the long lug should be about 7½ to 8 inches from the nut on the heel bolt.) Most mills have a standard height at which all power straps are to be set and run. The loom fixer then uses the pick arm slot for increasing or decreasing the power as necessary. With the power strap set up 7½ to 8 inches, the lug assembly should be about ¼-inch higher on the picker stick end than on the pick arm end. Too, this 7½ to 8-inch height of the power strap will allow for correct stroke of the picker stick which on this model and width loom should be about 8 inches.
4. Set for stroke of picker stick. This can be done in two ways, either of which will achieve approximately the same result. With the loom crank shaft still on top center, take out all lost motion between the picker stick and the picker arm by use of the lug assembly, or, second, turn the loom so the pick ball is being given the highest lift by the pick cam. Adjust the length of the long lug so that the picker stick is moved about 8 inches from the back of the shuttle box. Measurement should be made from the face of the end lay strap at the back of the box to the back of the picker when on the forward stroke. Worn pick points, pick balls, pick shafts and bearings should be replaced as any of these cut down on the stroke and power.

I am submitting herewith some practical points on various phases of loom fixing that I hope will be of help. You will note that in a large number of cases, the same things are listed more than once. I am sending these just as I had them listed.

(This list appears on page 124.)

The book on "Methods of Fixing Looms", by B. H. Hawkins, referred to in this article, is available from the Subscription Department of COTTON, 1020 Grant Bldg., Atlanta, Ga.

To My Fellow Workers:

Seven weeks ago my only son was killed in the war.

Most of you know this but you can't possibly know how Hardy's mother and I feel.

That is, none of you except Walt Gardner who just lost his boy too.

Since Hardy's death I've been doing a lot of thinking. What I'm trying to figure out is why so many of us are taking things for granted and not doing all we can to help win the war.

Maybe it's because we keep hearing and talking about the war lasting for years. That sort of thinking might keep anyone from hurrying.

It could be that this long-pull stuff was why we lost almost half a million minutes of production time last month through absences and tardiness.

Anyway I'm fed up with all this talk about a 5 or 10 year war. There's no sense to it. We can win this war quick. We've got to.

If we don't your boys will be killed like mine was.

Please, please don't wait for the casualty lists to come rolling on. Throw yourselves into high — NOW.

Get going as though both the Huns and the Japs had to be licked in 1943. Maybe they will be if we really try.

I suggest a new slogan for Carrier. Here it is —

"LET'S GET IT OVER QUICK!"

I hope you won't think I'm preaching. I'm not. I'm praying.

Yours truly,
Arthur Hocking*
Clock No. 2062

*An employee of Carrier Corp., Syracuse, N. Y.

To You—Dad Hocking—We sincerely hope and pray that every person who reads your plea will throw it in high NOW to get this damned war over QUICK—and we hope millions will read it.

To editors of other publications—THE LOUIS ALLIS CO., Milwaukee, will send an electrotype of this page to you gratis—so you can reprint this Dad's plea in your publication.

# Procedure for a Loom Fixer Going to a Flagged Loom

**A. When shuttle is partly in box:**

1. Examine lugs, check straps, pick balls, cam point, heel straps and bolts, power strap, and pick arm stirrup to see if they are loose or broken.
2. Turn loom over to see if pick cam has slipped.
3. Check frog steel and see if there is cotton or waste under it.
4. See that the daggers are not dragging.
5. See that the pick shaft is not binding.

**DO NOT START THE LOOM UNTIL THESE THINGS HAVE BEEN CHECKED**

6. Loom can now be started and shuttle should be checked for bouncing.
7. Listen for sounds of pick shaft knocking or any clinking noise.

**B. When shuttle is in the box:**

1. Check shipper lever and lick and see that the lever is not slipping off.
2. Check filling hook to see that it is not catching the fork when the filling is not broken.
3. Check stop motion bars—see that they are not clogged and binding causing loom to tip off.
4. See that the knock-off bunter on the lay is not loose.

**CAUSES OF A LOOM SLAMMING OFF**

**A. Pick motion troubles**

1. Weak lug strap.
2. Stroke too short or too long.
3. Picker stick cracked, weak or warped.
4. Pickers not parallel or broken.
5. Heel bolt loose, heel strap or spring broken.
6. Parallel loose.
7. Power strap too high, too low or broken.
8. Pick arm stirrup loose.
9. Pick shaft loose and not set in proper position.
10. Pick ball worn or spindle on pick shaft worn.
11. Cam point loose or worn.
12. Pick set too early or too late.
13. Set stop on pick shaft.

**B. Shuttle not boxing properly**

1. Check strap broken, or not set in proper position.
2. Box fronts too open or too close.
3. Binder finger set off.
4. Binder spring broken, too slack or too tight.
5. Loom out of line.
6. Shuttle not boxed in center of lay.
7. Shuttle with bow on back, or worn badly.
8. Protection rod spring too tight or too loose.
9. Protection rod cuff loose.
10. Dagger too high.

**C. Loose or worn parts**

1. Cam shaft or crank shaft box loose.
2. Crown gear or cam shaft gear worn out.
3. Pitman arms worn out or loose.
4. Swords loose.
5. Rocker bearings loose or worn out.

**D. Belts too slack or sticky**

**E. Harness timed or set wrong**

1. Treadles not in proper notch in treadle arm.
2. Harness cam set too far back or too close (Standard setting is to have harness level 2½ inches from fell of cloth on ordinary weaves.)
3. Treadle rollers or studs worn out.
4. Treadle arm stud worn out.
5. Harness roller straps not the same thickness.
6. Harness set too high off the race board. Harness should clear the race board about the thickness of one thread on each end.

**IMPORTANT ADJUSTMENTS IN BOXING THE SHUTTLE**

1. Protector rod in good condition and properly adjusted.
2. Proper stroke on picker stick.
3. Pick cams timed correctly.
4. Distance of lug from heel bolt.
5. Lost motion in short lug and pick arm taken out.
6. Lay end plates lined and tight on lay.
7. Reed squared and back box plates lined.
8. Front box plates squared on lay end plate, good leathers on plates.
9. Good leather and bushings in binders.
10. See that binder bushing is not too short.
11. Tension on binder spring correct.
12. Tension on protector rod spring correct.
13. See that shuttle check on bracket is divided.
14. Give check strap proper check front and back.
15. Don't strain check strap, use adjustable friction for its purpose.
16. Have good parallel blocks.
17. Use heel spring for its duties alone.
18. Have lay and strap in lay end plates.
19. See that shuttle is centered in box.
20. Don't pinch shuttle with binders.
21. Correct opening at mouth of box.
22. Pickers properly paralleled.
23. Pickers properly driven on and tight.
24. Have good bumpers in lay.
25. Have leather under dagger stop.
26. Set dagger stop on correct opening of daggers.
27. Run as little power as possible.
28. Have good filling groove in shuttle wall.
29. Have good concave in bottom of shuttle.
30. Be sure picker sticks are correct length.
31. Have correct leverage on dagger finger.
32. Set protector rod spring so that expansion will not grip rod.
33. Clear out oil holes in swords for protector rod and oil.
34. Tighten all nuts and screws.
35. See that shuttle is well polished.
36. See that shuttle points are good.
37. Shuttle spring tight and in line.
38. On new shuttles check eye and see that there are no burrs.
39. Use eccentric on binder bushing and don't drive.
40. Do not force reed out of line by hammering reed cap down.
41. Be sure back wall of shuttle is squared.

**CAUSES OF LOOM TIPPING OFF**

**Warp stop motion troubles**

1. Feeler bar stuck or too high, or choked up.
2. Bunter loose.
3. Latch too high.
4. Cable bent.
5. Bars out of girt on light goods.
6. Broken drop wire.

**Things that will cause a weak pick**

1. Stroke not set.
2. Heel strap broken, heel bolt loose.
3. Lug strap worn badly, lug strap set too high or too low.
4. Power strap broken.
5. Late pick.
6. Pick point worn or loose.
7. Pick ball worn.
8. Pick shaft loose, or worn, or binding.
9. Bad picker stick, cracked or weak.
10. Floor bolts loose.

**Protector motion troubles**

1. Protector rod set too low, worn out, or bearing worn out.
2. Protector rod spring slipped.
3. Frog not set right, R. H. frog loose, cotton under frog piece.

**Miscellaneous troubles**

1. Shuttle not boxed properly, shuttle bouncing.
2. Sword loose.
3. Pitman arms loose (X-Model).
4. Crank shaft box and cam shaft boxes loose.
5. Reed cap loose.
6. Head gear loose, or crown gear loose.
7. Belt too tight, too loose, or sticky.
8. Slack warp or slack warp thread.
9. Filling fork hanging.
10. Harness set wrong.
11. Shipper lever and lever lock worn or slipping off.
12. Rocker shafts and boxes worn out.

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# Against High Card Speed

**"Wash" comes to bat to disagree with the current general trend toward higher card cylinder speeds . . . . . .**

EDITOR COTTON:

For 30 years I have been a contributor to the "HOW OTHER MEN MANAGE" Department of COTTON. I have been a subscriber almost since the birth of the magazine. Thirty years is a long time, and as I look over my copies since the year 1913, I know now that very much may be learned from most contributors.

To me, as well as to others, the department is an obliging friend, accurately answering in most cases the hundreds of perplexing questions that are unexpectedly presented monthly. To the textile school students and others it is truly a university of our day.

At 72 years of age, I realize that no man can absolutely guide another as regards his aims. However, since the year 1913 I have done my best to give the boys in this department the idea that we can learn best from one another and that we must learn by experience.

Now let us turn to the report, on page 70 of the January 1943 issue of COTTON, of the "meeting by mail" of the Alabama Textile Operating Executives, and study some of the reports there as to the results from operating higher card speeds. Take the report of Mill No. 3: "We made no changes in the settings of our cards when increasing the cylinder from 165 to 195 r.p.m. (We believe an increase in cylinder speed does require some changes in the setting on certain makes of cards)." Why?

In the same paragraph Mill No. 3 states, "The higher cylinder speed gave a higher breaking strength." I don't believe it.

In the first place, the type of card makes no difference; in the second place, the more you act on the fibers, the more you weaken them. Sample your fibers in the lap, and then sample them in the web, and you will find them weaker, and more fluffy, which proves that the more action on the fibers the greater the injury to them.

There can be no argument on that point, for after the fibers have passed through the cards they are termed waste.

If you will string along with the answer of Mill No. 7 in the report referred to, you will not be far wrong. This mill says, "In our experimenting with increased card cylinder speed, we have not made any change in the setting. Everything, including production, was increased in proportion. The strength and quality on the higher speed compares favorably to the strength and quality on the conventional 165 r.p.m. speed. In fact, we can see no difference in the yarns on a blackboard. We do find that the maintenance cost is higher with the higher speed."

Now let us study the discussions on "Light Versus Heavy Carding" on page 71 of the January issue in this same report.

The answer from Mill No. 2 is O. K., if the speed of the licker-in is not disturbed. That mill said, "It has been our experience that a light lap gives the better results. We would increase the speed of the licker-in for a light lap and decrease it for a heavy lap." This was in answer to the following question, "Which will give the best results: a light lap fed to a card or a heavy lap, that is, 14- or 18-ounce laps, making a 66- to 68-grain sliver? Would you increase the speed of the licker-in?"

I have been superintendent of a few mills, and if a carder under my charge dared to run an 18-ounce lap, I would fire him.

The answer of Mill No. 10 to this question read as follows, "A light lap fed to a card will give the best results. You will have less chance of plucking and less chance of nose cakes. You can set the top flats closer and get a much better web. We increase the speed of the licker-in and set the feed plate farther away from the licker-in than the usual setting."

I would string along with this answer but would not increase the speed of the licker-in or set the feed plate away from the licker-in.

Now let us read the answer of Mill No. 15: "We get best results from feeding a heavier lap. This gives the licker-in more time to comb the cotton before it is delivered to the cylinder. If you run a heavier lap you will have to slow down the feed roll. We do not increase the licker-in speed."

This mill would give the licker-in time to give the fibers under its action a useless beating that would be sure to weaken the fibers.

I would like to have every student consider the following:

Since the birth of the revolving flat card, every builder after many tests fixed the surface speed of the cylinder as double that of the licker-in. There must be a good reason why all builders agree on this standard speed.

One mill reports that speeding the cylinder from 165 to 195 r.p.m. gave a better break. In such a case why not speed up to 205, yet, 225; why not, if a higher speed gives a better break?

Before increasing the speed of the cylinder on any cotton card the following should be considered:

Let us assume that the doffer fillet has 72,000 points to the square foot. Is it not fair to assume that many fibers will pass the doffer and be taken around a second time? See the answer from Mill No. 3. This mill confesses that the fly under the card was increased. On the other hand, if the doffer fillet has 100,800 points to the square foot, it can be seen that fewer fibers will escape the surface of the doffer with a higher cylinder speed.

When making tests on different speeds on cards, the tests should be made from the same bale of cotton. Ask any cotton grower, and he will tell you that the fibers in the bolls that are opened by the action of the frost are not developed and the fibers are weakened by the sun and rain. This kind of cotton can spoil many tests.

WASH (R. I.)

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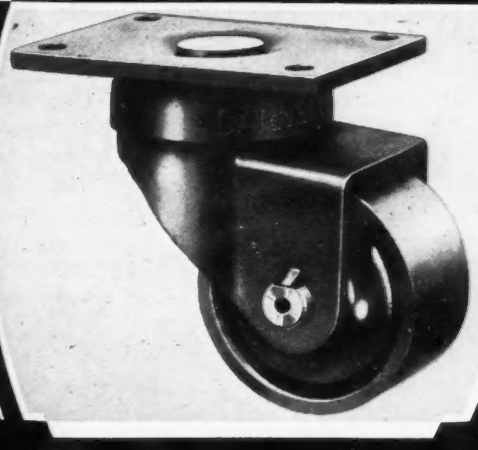

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# Penalizing Efficiency

EDITOR COTTON:

This letter is not written with any hope whatever of getting an adjustment made on the problem set forth here. It is rather an attempt to show that all thinking people are conscious of the condition described.

This is headed "Penalizing Efficiency"; perhaps it should be headed "Why Textile Overseers Go Nuts". The men who read this through glasses that are worn because their eyes are weak from figuring hank sheets, payrolls, production reports, and from squinting at the fine marking on yarn scales, will remember very well when as boys they went to work learning to doff or to run cards, and how they were paid from $1.50 to $3.00 per week while learning, and how anxious they were to learn as soon as possible so they could make regular wages. These wages, we will say, were from $9.00 to $12.00 per week. Also, they were spurred on to learn by their pride; they were ashamed to be called learners, and incidentally they were reminded of this fact often enough by the skilled workers who would have them lifting spinning frames over so they could sweep under them. But the point is that they learned—but quick—and when they had learned one job they were anxious to go on and learn another.

It is true that we worked for a lower wage in those days, but strangely enough we were all happy and strikes were unheard of. In those days when an overseer found it necessary to talk a bit rough to a man about his work, one of two things happened: either the man quit or he ran his job in such a way that the overseer had no cause to jack him up again.

Then came World War One, and since it is my contention that conditions change men rather than men changing conditions, I suppose I must say the war changed the whole textile industry, whether for better or for worse. From several standpoints that question is debatable. But certainly, from an overseer's viewpoint, as things stand now, he has room to question the methods he is forced by conditions to employ. For instance, he is forced to take into his department and teach how to run a job a class of youths whose parents have, through this change in our way of living, given their children money to squander until they have learned to hold in contempt the thought of honestly earning their spending money. Thus the overseer is placed at a disadvantage from the start because he has an unwilling pupil. His chief worry, however, lies in the fact that the learner is paid practically the same wage for learning that the veteran speeder hand, spinner or weaver gets—though they have years of experience back of them.

We will consider Joe Smith, a speeder tender who has run frames for 15 years. He is running by the hank and makes $25.00 per 40 hours. You put a learner to work on the same kind of job and for the first week or so he costs the company plenty of money in various ways, not the least of which are hard ends, doublings and singlings, and yet you pay him 40 cents per hour. Now the difference between 40 cents and 62½ cents per hour is not enough to make him get in there and really try to learn to run frames. Besides, he is not held responsible for production until he takes over a set of frames, and he would rather be free to stay out when he wants to see a football game, and this he knows he wouldn't be supposed to do if he were a speeder tender. So he drags on as long as possible, and then when the foreman lays him off he goes to another plant where they are short of help. He will slip out and smoke for 30 minutes, but if an error of 20 cents appears on his statement he doesn't hesitate to squawk. The one thing he can quote you word-for-word is the wage-and-hour law.

So much for the learner and the problem he represents. The mill owner and managers themselves are in part to blame for the worries of an overseer, for when business got dull back in the 1930s most managements cut off all of the help that did not appear to be paying direct dividends, such as sweepers and cleaners. It is true that the management is more lenient and closes its eyes to dirty floors, etc., but the overseer who ran a room where the machines were clean will never be satisfied under any other conditions, and he knows that once you have become lax in cleaning discipline, it is hard to restore the system back to its former position of neatness.

We all know that with our tremendous war effort to maintain that we must make sacrifices and continue to make them, and this letter is not intended as a bellyache, rather it is a lament. I say this because I think of no way to improve the situation at this time. However, if this condition of the method of training mill help doesn't change, the time will soon come when the old help who are honest in their work will become disgusted to the point where they will also get careless and negligent.

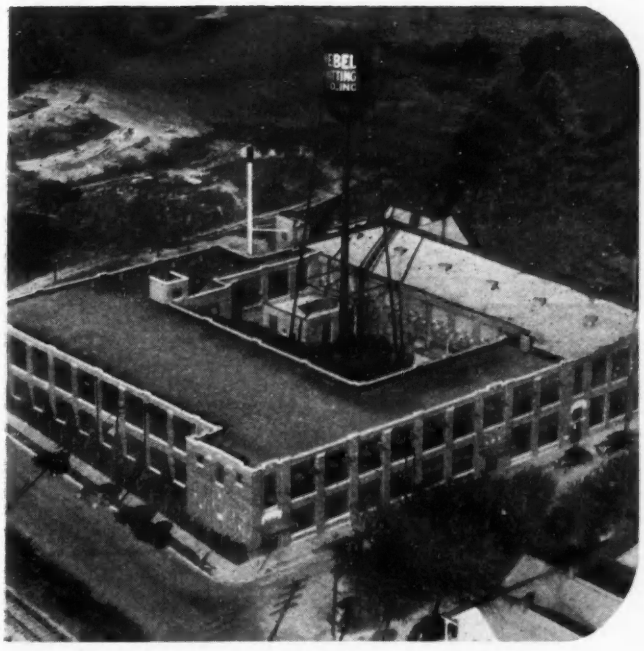
All the holds formerly had by the overseer whereby he could apply pressure to make his help do the honest and fair thing have been taken away. You cannot dock a hand for a bad piece of work. If you fire him, you have to go through a lot of formalities, and if a man can hide from you eight hours and can prove he was in the mill those eight hours though he has been asleep you must pay him, and with the kind of help we now have it is very hard for an overseer to keep tab on all of them.

I am convinced that it is people of this type who are responsible for these shut-downs in our vital war production plants, because only this type of man would be selfish and un-American enough to slow up our war effort. Yes, the worries of an overseer are various and sundry and it looks like his future work is cut out for him.

The nearest approach I can get to a solution of this learner problem is to try and select the help to be taught from a favorable environment, that still leaves the obvious fact that the veteran skilled worker is going to feel like you are penalizing his efficiency. If anyone has an answer to this problem I surely would like to have it, for I feel that any workable answer would reduce the sale of headache powders noticeably.

CONTRIBUTOR No. 7441

# Would repairing, altering or adding to your present plant facilities



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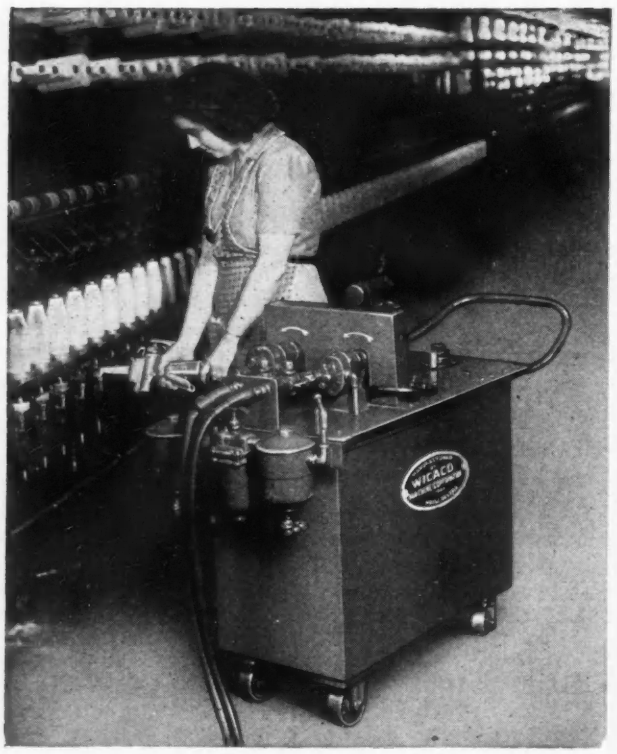

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*Continued on Page 132*

*Continued From Page 131*

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**904. FORM 769. CONDENSED CATALOG**—A 40 page pocket size booklet illustrating and describing sewing machines adaptable for practically all phases of the needles trade.—WILLCOX & GIBBS SEWING MACHINE CO., 214 West 39th St., New York City.

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**1001. HOW TO DETERMINE WHERE OVERHEAD MATERIALS HANDLING EQUIPMENT CAN BE USED PROFITABLY**—Illustrated folder including elements of materials handling system, preparation of simple layout.—CLEVELAND TRAMRAIL DIVISION, Wickliffe, O.

**1002. CATALOG NO. 22**—An attractive illustrated catalog describing in detail the Shamrock shipping containers and the new canvas trucks for textile use.—MEESE, INC., Madison, Ind.

**1003. CASTERS AND WHEELS**—192 pages, describing casters and wheels suitable for all types of industrial application. Every mechanical engineer and purchasing agent should have this.—DARNELL CORP., LTD., Long Beach, Calif.

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**1007. HOW HANDLING PROBLEMS HAVE BEEN SOLVED**—A 50-page booklet presenting in pictorial form many solutions to industrial handling problems and showing how they reduce costs, save labor, eliminate storage and provide free movement of stock between processes.—AMERICAN MONORAIL COMPANY, Cleveland, Ohio.

**1009. TRUCK CASTERS AND WHEELS**—24 page illustrated catalog covering casters and wheels for all truck use with specifications.—THE FAIRBANKS COMPANY, New York City.

**1012. DANDUX CANVAS BASKETS**—Catalog illustrating and describing "DANDUX" line of Baskets, Hampers and Trucks for the Textile Industry and general use.—C. R. DANIELS, INC., Newark, New Jersey.

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## MISCELLANEOUS . . .

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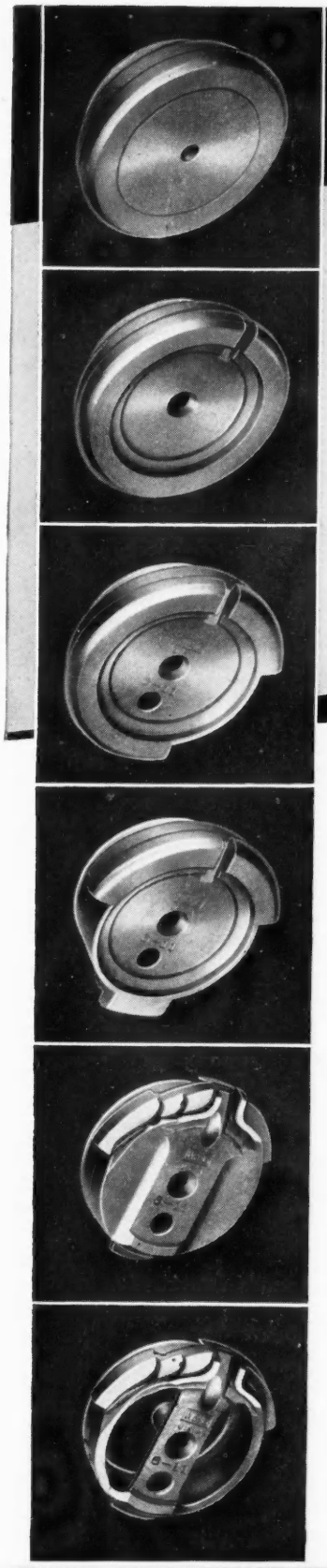
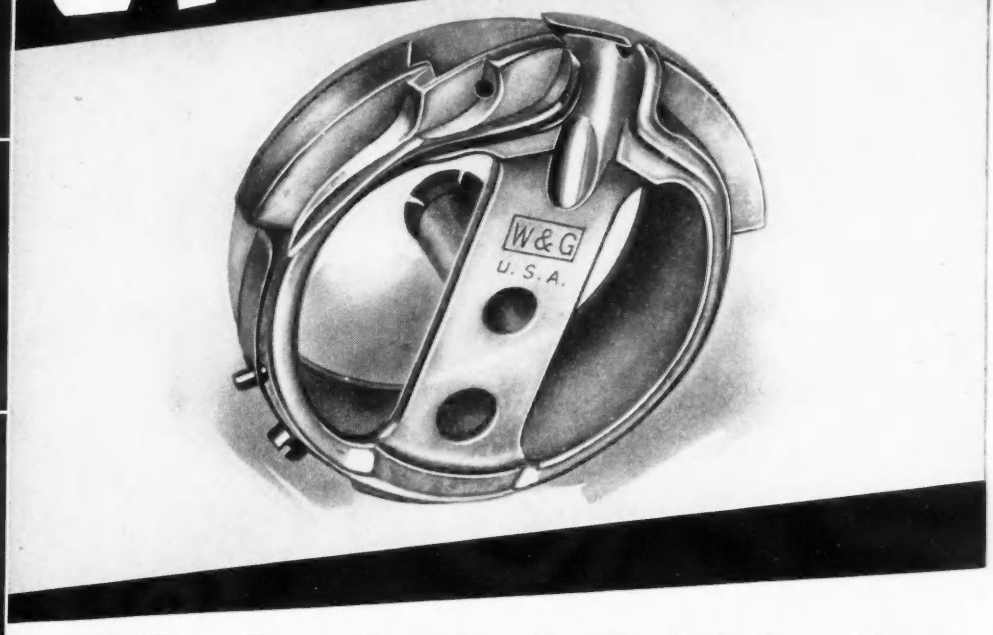


# EVOLUTION




## of the Lockstitch Bobbin-Case

Of the approximately 216 individual items that go to make up a complete Willcox & Gibbs Lockstitch, the Bobbin-Case can be considered as being one of the most vital parts of the machine.

Mill requirements grow more and more exacting from year to year; higher speeds—better quality of finish—entirely new fabrics to be handled—with the result that manufacturing limits must be refined from time to time and new methods adopted to meet the modern needs of production.

In the course of manufacturing a Lockstitch Bobbin-Case it is necessary to complete 122 operations and to employ 240 individual special tools of which 91 are test gauges, before the part is ready for sale.

These operations must be carried through so that each one will tie into those that precede as well as those that follow. To this end suitable manufacturing limits are established; the finest being .0005". Some idea of the exactness of these manufacturing tolerances may be deduced from the fact that the thickness of a human hair is about .0015". Some Willcox & Gibbs parts are made in normal production, to the accuracy of *one-eighth* the thickness of a human hair.

For prolonged life of your Willcox & Gibbs and Metropolitan machines use *only* genuine parts and needles.

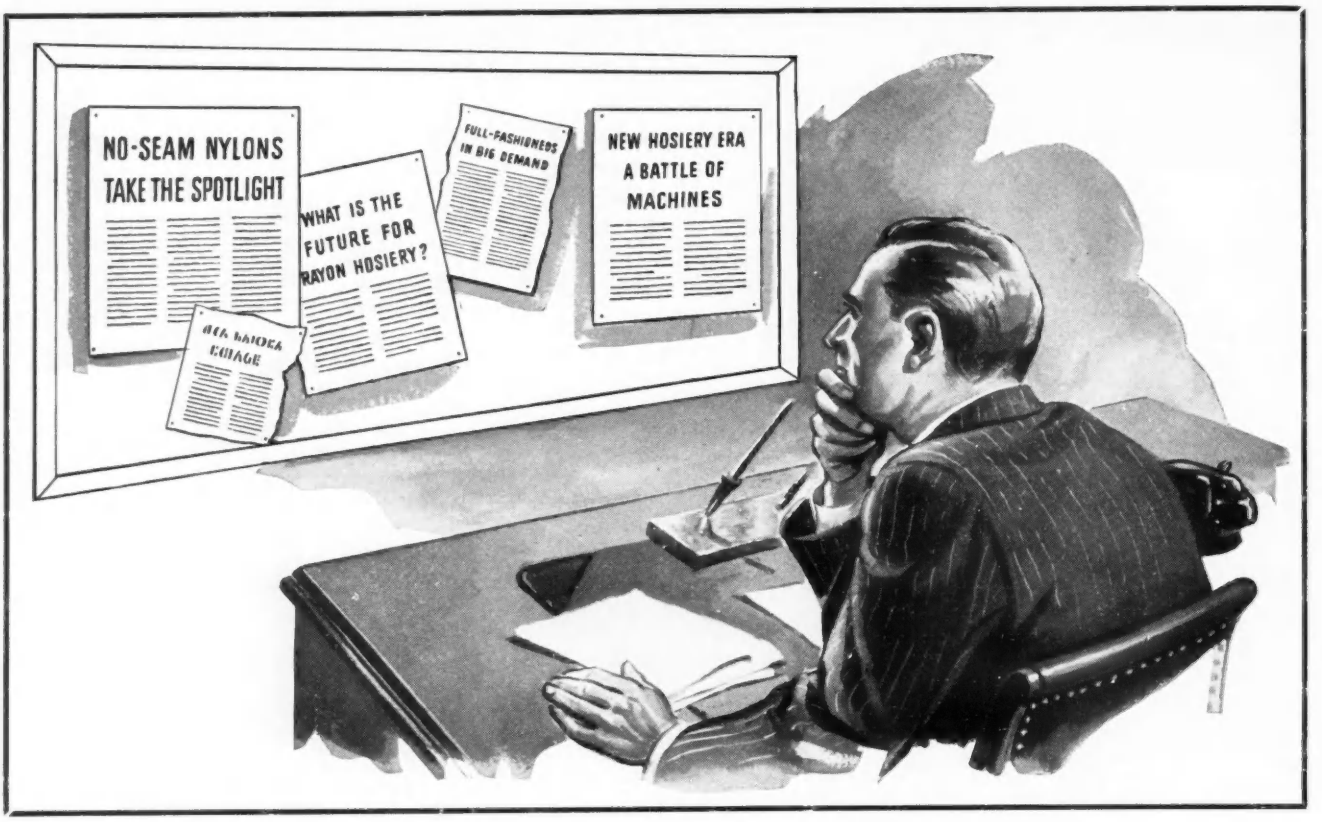
*A few of the many operations required to manufacture a Lockstitch Bobbin-Case.*

**BUY UNITED STATES WAR BONDS AND STAMPS**

*A machine is only as good as its component parts*

**WILLCOX & GIBBS SEWING MACHINE CO.**

**214 West 39th Street, New York, N. Y.**


NO-SEAM NYLONS TAKE THE SPOTLIGHT
WHAT IS THE FUTURE FOR RAYON HOSIERY?
FULL-FASHIONED IN BIG DEMAND
NEW HOSIERY ERA A BATTLE OF MACHINES

# WHAT WILL THE HOSIERY BUSINESS BE LIKE

## *AFTER THE DURATION?*

This much is certain . . . the hosiery business will not go back to pick up where it left off. Once having sampled what amazing new yarns and ingenious new manufacturing techniques can deliver, consumers will most certainly exercise new purchasing discrimination for the products of these precedent-shattering innovations.

We in the hosiery industry have been fortunate indeed in having had this indication of trends our post-war business is likely to follow. Although both the new developments just prior to the war and the further improvements which have been made during the past year have been temporarily "filed" out of wartime necessity, they are certain to create new style appeal and consumer demand . . . and they will set up future competition on a scale far keener and more intense than we have ever known. With this in mind, far-sighted mill men are already perfecting plans for post-war operations along lines that will assure widespread acceptance and demand for the products of their mills.

And the most immediate concern is the type of knitting equipment that will be needed. For without the *right* knitting machines no manufacturer can expect to keep in the running *after* the duration.

Are you considering this question now in planning your program of future action? Here at Scott & Williams, we are planning in terms of the knitting machines that you will need to do this job. Our thinking . . . and planning . . . may suggest a practical answer to your problem. We will welcome the opportunity to talk it over with you.

The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point offices.

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**SCOTT & WILLIAMS**

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# KNITTING SECTION

# A Peep into the Future for Full-Fashioned Hosiery

THE HOSIERY industry and particularly the women's full-fashioned division, in view of its revolutionary changes since July 25, 1941, when trading in silk in this country was stopped, cannot be criticized when it now shows interest in what is ahead for the duration and more importantly in the post-war era. Since silk was taken away as a raw material, the hosiery industry has shown itself to be one of the most versatile because shortly thereafter its main recourse, nylon, was taken for war use and thereupon the hosiery trade had to seek a new fiber. This was rayon and evidence is that for the duration at least this will be the main fiber used for making women's full-fashioned hose.

Notwithstanding the world-shaking events in and out of the business, hosiery manufacturers and allied trades have accomplished almost the impossible. Not only have they turned out a first-class product showing almost unbelievable improvement over the rayon hose of pre-war days but volume has been kept up at a much higher level than was expected only a year back. For example, during the first quarter of 1943 shipments of all types of hosiery registered a gain of 3.4 per cent compared with the corresponding period a year previous but in women's full-fashioned lines alone the gain over the 1942 months was almost 10 per cent. In March, 1943, rayon constructions accounted for more than 90 per cent of total shipments of women's full-fashioned and 65.5 per cent of women's seamless shipments, excluding ribbed goods and knee-lengths.

As to chances of maintaining this rate of production, some feel that it will hold during the balance of the year at least but the American Federation of Hosiery Workers at the recent annual convention was told that production of full-fashioned hosiery this year will fall off about 10 per cent compared with 1942. It was pointed out that production this year will be about 30,000,000 dozen pairs and a production of about 2,500,000 dozen pairs of all-cotton and mixtures. There are two main problems that must be fought to get out production now, the first being to obtain the needed supplies of rayon yarns in the face of greatly and rapidly expanding demands for rayon yarns for war goods. When the war first started there was hardly any goods bought by the Army made from rayon but now the variety and volume of such is great. Not only are fabrics such as linings and balloon cloth, made of rayon but hose and undergarments for the women military forces, to say nothing of the parachutes for other than personnel, and fabric for military tires.

Within the last couple of weeks indications have been that more rayon of the high tenacity type will have to be allocated for the armed forces so that this may mean less for the civilian trades, of which hosiery is the largest consumer. It is probable this was in the mind of the War Production Board when it issued new construction rules trending toward more simplification and standardization. This program was aimed at saving 15,000,000 pounds of hosiery yarns annually. Hosiery manufacturers are limited in the rayon yarns they may obtain also because under the Good Neighbor Program we are allocating considerable poundage of the man-made fiber to our neighbors in Latin America.

The second handicap to maintaining production is the manpower problem. In this connection, the hose federation in a recent report declared that "the current rate of labor turnover, and the depth to which the Selective Service Act will reach into our industry, will leave us with a greater shortage of skilled and semi-skilled labor than any time in our history." Employment in the full-fashioned hose industry has declined sharply since 1941. In March of that year employment was reported at 91,600 workers and in March, 1942, at 72,700. National Association of Hosiery Manufacturers in December, 1942, estimated employment at 67,800. This indicates that every effort should now be made to keep the remaining skilled workers in this industry if even the minimum civilian needs are to be met in the coming months and if the mills are to be in a position in the immediate post-war era to inaugurate programs now being evolved.

It is probable that the early post-war period will see a continuation of the Government controls such as ceilings and standardization because it is evidently the policy of the Administration to guarantee full employment in the United States if not by private industry then by Federal aid. In addition it will also be the policy to clothe the occupied and conquered countries so that demands to be made upon textile manufacturers including hosiery are expected to be larger than in the past. Manufacturers should plan

to function under such conditions for some time ahead with the added probability that their margins of profit will be very narrow with taxes to continue heavy. Such conditions place a premium upon the most modern machinery and equipment and machine builders are sure to be operating under forced pressure for years ahead to re-tool the industry.

What will be the main raw material for the full-fashioned hose field in the post-war era? There is a difference of opinion, some predicting that silk will again be used and others that nylon and rayon will have the field with no silk to come in. It is surprising that even with feeling against Japan so strong in the United States, some would venture to predict that American hose plants would again use silk. The guess is made because these manufacturers hold that at the war's end the economy of Japan will be at a low ebb with help needed not only for the good of that country but to facilitate world trade, in line with the international viewpoint. Such predictors say we will almost be forced to take silk to give Japan dollar exchange in a World New Deal but in time of war with feeling so strong against her, this line of reasoning does not meet with favor, nor do many believe they will change their minds.

If silk is not to come back then the main recourse will be again for nylon with greatly improved other man-made yarns to play a more and more important part in the post-war era. In this connection, it is assured that the conversion of nylon from the production of parachute yarns to those for stockings will take a very short time so that almost immediately at the signing of peace hose makers can depend on a large supply of nylon. Not only will the fiber be improved for hose but knitters will turn out added merchandise compared with the pre-war days, including more non-run mesh types as well as hose for nurses. Proportioned sizes are sure to be then more readily available. Seamless nylons are also going to come into great prominence. They are steam-set and retain their shape just as full-fashioneds do. It is sure that while nylon yarn will be quickly available at peace it will take a number of months to build up stocks of the new merchandise throughout the country.

Other synthetic yarn firms will at the end of the war be ready to release new type hose yarns to the industry and full advantage will then be taken of the great strides that have been achieved in the making of superior rayon hose yarns now. The high twist rayon yarns now produced are so much different from the pre-war rayon yarns for this use there is no comparison. This improvement for all types of hose will accelerate and prices of the fiber will continue to decline. If the national policy does permit silk imports again, it is sure to meet much greater competition than any time in the past.

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### Eliminating Lint Problem in War Plants

Celanese Corporation of America, 180 Madison Ave., New York City, have announced the development of a special group of fabrics entirely free of lint, especially for use in war plants making delicate, high precision instruments for planes, tanks and guns, where fine particles of lint may prevent the perfect functioning of these delicate parts. These lint-free fabrics of Celanese rayon are being released in various forms. Cover-all lint-free garments are preferred in white, being easy to clean. This is so important a part of the precision plan that the garments never leave the assembly room except in sealed boxes when they go to the cleaner. Small wipe cloths for cleaning instrument parts are also of great importance. In some instances, the workers' fingers, no matter how spotless, may not come in contact with these delicate parts. Often it is necessary to wear white gloves made of the same lint-free fabric for a complete protection. Bench cloths, instrument covers, soft cloths for wiping fine lenses, and case linings, are among the many uses of lint-free fabrics in war production.

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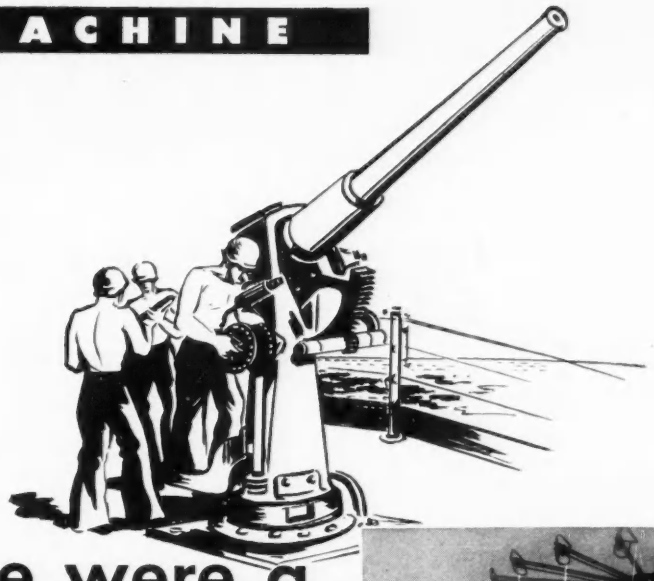
### AATCC Will Hold Contest, but No General Meeting

In compliance with the restrictions on traveling imposed by the Office of Defense Transportation, the council of the American Association of Textile Chemists and Colorists has again voted to abandon its plans for an annual meeting for this year. Nevertheless, the demand for the continuation of the intersectional technical contest has been so insistent that this event will be held. The papers contributed by the eight sections of the Association will be presented at a fall meeting of the New York Section, the date of which will be announced later.

Two innovations will be made in the judging of the papers. In the first place, the judges will receive copies of each contest paper a month in advance, so that they will be in a better position to judge the value of each section's contribution, than was formerly the case. Under the old routine, the judges heard the papers for the first time during their official presentation, and it was decided that proper judging of eight valuable technical treatises was almost impossible at such short notice. The second innovation is that the scale of judging has been shifted to place more emphasis on the practical value of the various papers to the industry. In the coming contest, the judges will allow 30 per cent for the paper's practical value; 30 per cent for its purely scientific value; 30 per cent for its originality, and an allowance of only 10 per cent for the quality of its presentation.

As usual the papers will be published in the official proceedings of the Association which appear in the *American Dyestuff Reporter*. Such publication follows as soon after their presentation as is feasible. The benefits to the Association from this Intersectional Contest cannot be questioned. The substance of the scientific matter which has been presented in these contest papers occupies a foremost place in the record of scientific contributions of the Association.

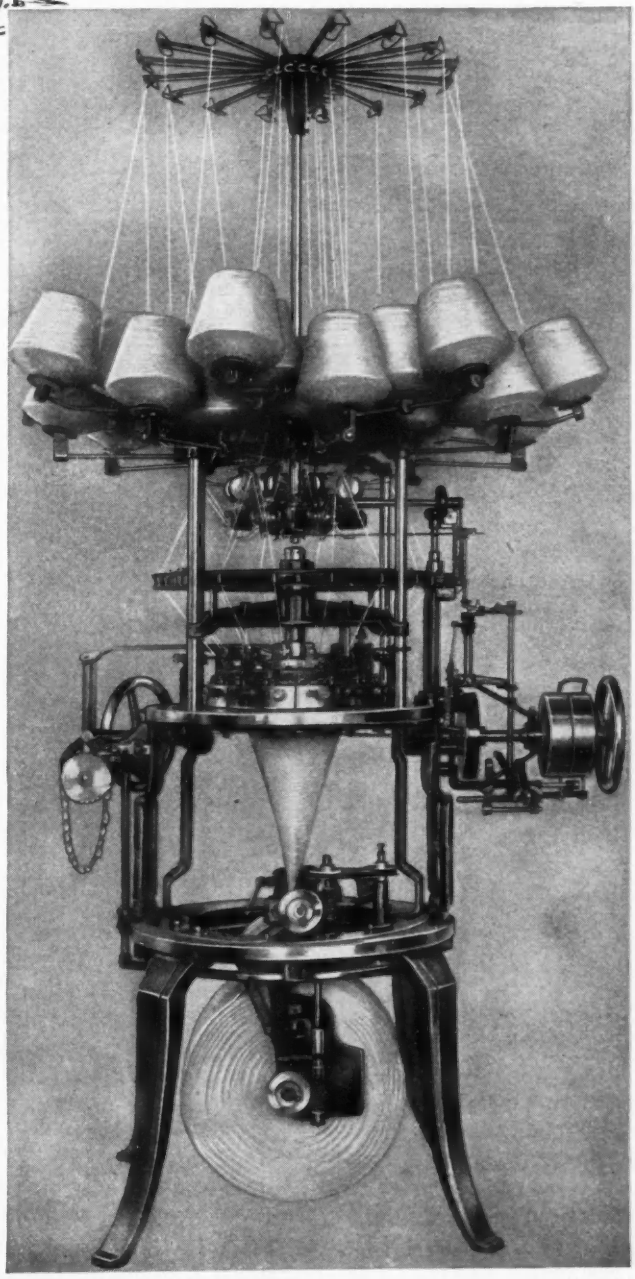
WILDMAN MULTIPLE FEED RIB MACHINE



# If there were a DECK GUN

that would fire twice as many shells in a given time as any other, and that required no more deck room, the Navy would grab it.

Well, you are fighting too—fighting a production battle, with limited factory space and man hours; and here's YOUR 2-to-1 machine as hundreds of alert knitting mills have discovered. On the same floor space that an 8-feed machine requires, you can put this Wildman 16-feed machine, and using only 1/3 more power, it will



## DOUBLE PRODUCTION

Besides, you'll get trouble-free performance, a finer, more uniform product, and many other advantages that we'd like to tell you about. Write today.

# WILDMAN

MFG. CO., NORRISTOWN, PA.

**For AMERICA "Throw YOUR SCRAP into the Fight"**

# Willie Doakes Replies to Earl Roberts for Machine Fixers

**IT LOOKS like Earl Roberts started something with his letters to Joe Doakes, the knitting machine fixer. Here "Willie Doakes" comes back at Roberts with the machine fixer's point of view. The first four letters from Earl Roberts to Joe Doakes appeared in the December 1942 issue, page 132; the March 1943 issue, page 120; the April issue, page 136; and the May issue, page 141. We suggest you go back and read some or all of these, and then come back and read here what Willie has to say. Then join the argument, if you wish . . . . . .**

DEAR MR. ROBERTS:

I have just finished reading your second letter to Joe Doakes in the March issue of COTTON, wherein you mentioned Joe's reply to your first letter which appeared in the December number. Of course I don't know what Joe had to say, but I am sure it was very interesting. Anyway, I got out the December issue and read your first letter again, trying to figure out just what he might have said.

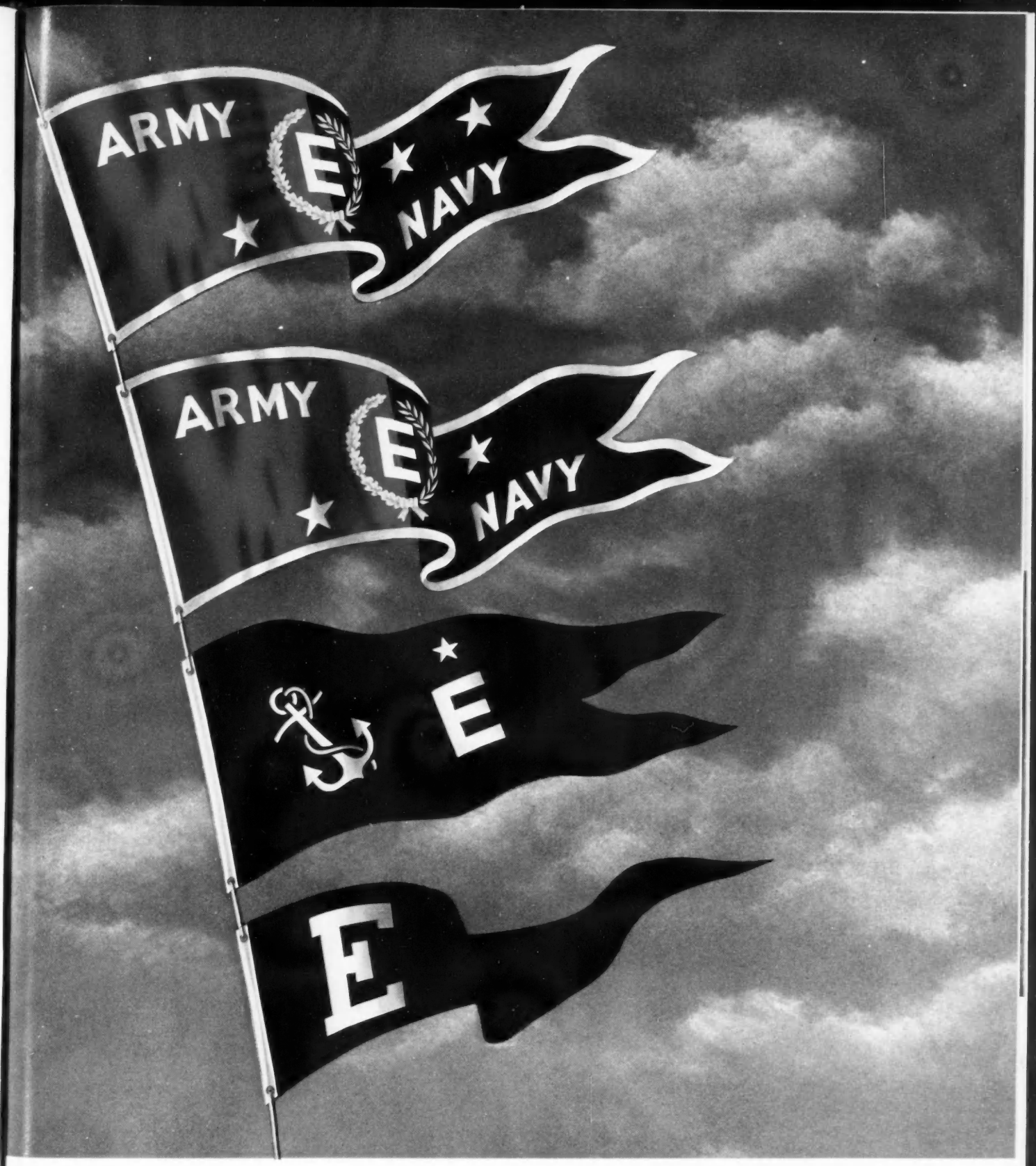
Oh, yes, I keep all of my textile magazines. I have all of the issues of COTTON for the past five years as I find them extremely helpful at times. Occasionally, I enter into a discussion or run into a problem at work that reminds me of something I read in one of the magazines, so I go back and look it up to find out what the writer had to say about it. Don't be surprised, we fixers are much more conscientious and interested in our jobs than we receive credit for.

But maybe I had better tell you who I am. My name is Willie Doakes, Joe's brother. I used to fix machines in your mill a long time ago, but was very conveniently "helped" to find another job at some distance from home because it was believed that brothers working together might not pan out so well. That was while you were still in State College learning the textile trade the *hard* way. You don't know what I mean by that? Well, fixers learned from experience, which, as we all know, is the best teacher. You learned from books full of theories and principles which didn't quite fit some of the problems you ran into after entering the mill. Then you had to learn all over again by weighing each theory against each problem until you arrived at the practical answer. That, Mr. Roberts, is the hard way.

Getting back to your letters to Joe, I am writing this for all of the Joes, because I believe you were just a wee bit unfair. Your letters have a tinge of sermonizing in them and you mention all the "Dos" and "Don'ts" as if you were teaching a group of children. Are you a fixer? Are you sure that Joe harbors all these thoughts you brought out? Are you sure you are not on the defensive and trying to cross all of the bridges before you actually come to them? Now, in your own words, "Let's look at your side of the ledger, and you had better be ready to take a little knock as the occasion arises for there is nothing like the truth to make a man stop and think." So, I'm going to answer your letter piece-by-piece and try to convey to you how Joe feels about it.

You say the boss is usually a real guy who has been brought up in the business and understands everything thoroughly. I'm glad you used that word "usually" for it dates your ideas and opinions. That was true before the days of speed-up production and wage-and-hour regulations. But now that the businesses have grown to such proportions, it is very seldom that anyone above the knitting room foreman knows the problems confronting a fixer. A great many hosiery mill owners today got into the business purely because they saw others making money at it, and thought it was a gravy train. They are the very ones who are doing all the beefing about not making any money due to taxes and the like. It's darn poor psychology always to be squawking in front of the employees about not making any money when we know very well they are. Maybe they aren't making as much as they did last year or the year before, but they are still showing a profit. Many a mill owner and manager has lost the respect of his employees by talking when he should have been home listening.

When speaking of fixers taking a real interest in their work, do you really know just how interested they are? Knitting machine fixers are proud. They like to know that their particular sets of machines are running regularly and most efficiently. True, there are exceptions, but as a whole, they are a very co-operative lot. When another fellow is in trouble they go over to see if they can help him. If they get into a serious hole and there is no one in that mill who is able to help, they hunt up fixers from other mills, on their own time, to talk it over and perhaps get a clue of some sort. A fixer's job is not done at the end of his shift as is commonly said. I know from experience that many a problem is carried home and pondered over away into the night. Quite often an idea occurs to us which might not come to us during a busy day, and we often make notes on




**An obligation of honor."**
PREMIER ASQUITH

*Until the Victory is Won!* . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines—but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

***For a lovely farmerette . . .*** Every woman anticipates the thrill of clear, even-textured stockings in her well-earned leisure hours. Every hosiery manufacturer knows that no machine can knit a better fabric than the needles can produce. Keep your knitting machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

such things for future reference. Many a fixer has gone back to the mill at night to try out an idea which might help.

And here's something to think about. How many mills give their fixers a chance to go to the textile show where they can meet other men and have a chance to broaden their viewpoints? A fixer is allowed a few days' vacation a year. What does he do: go away some place where he won't have occasion to think of his work? That is what he should do; but, no, he goes to some other city to visit relatives or friends who are also associated with hosiery machines and delights in visiting the other mills. He spends his whole vacation, a week at the very most, talking hosiery. Funny, isn't it.

I am sure of this as my wife says she hears socks and knitting machines until she is ready to scream. Wouldn't it be a good idea to send or take some of your best fixers on a visiting tour to mills in other localities, so that they might get some ideas as to how other mills manage? And would it not be sound business to send a fixer to some textile school now and then for a short course just as our school teachers go back to brush up on new methods?

Before we criticize too severely the fixer who is seen sitting on his tool box now and then, let us take a trip around to some other mills. Nine times out of ten the mills having such a fixer are running much more efficiently and regularly than those that don't. I remember very distinctly a mill owner telling me that when he first went into the business, and that was a very long time ago, he couldn't bear to see his fixers idle for even a short time. He says it took him two years to realize that when his fixers were not working constantly he was making money.

We fixers are generally considered just a bunch of employees who are waiting for pay-day. If only you knew what is in our minds. Why not request our opinion sometimes before making some radical change in the mill? It might surprise you to find out just how much good common horse sense we are capable of showing as compared to a lot of theories. An oil salesman comes along and sells you a new kind of oil because another mill man who happens to be a personal friend of yours is using it. You explain it to us and want us to give it a fair trial, which we do without a word. When this sample lot is gone, do you come back and get our honest opinion about it and get down to "why" facts? Usually, no, for we hear no more about it and just go on using that particular kind of oil because it might be cheaper. We are the ones who know from experience what is best for our particular kind of work and conditions. Also, our opinions could be worth many dollars if we were allowed to voice them in respect to installing and locating new equipment. It has been my privilege to visit a good many hosiery mills, and I know full well the fixers were not consulted about arrangements. Some of them actually made me sick.

Many a mill man has been heard to say, "We have our own machine shop, and do all of our own work." Will someone please enlighten me? Has this actually been figured out from all angles and does it show concrete savings over buying repairs from the machine manufacturers? From experience I know these men in the machine shop are machinists and not fixers. A fixer has to spend a lot of time with him in order to get anything done properly, and many hours and dozens of production are lost without even considering the original cost of the shop. By having such a shop much patching and mending is done from time to time which only puts off the inevitable replacing of parts. It is under these conditions, Mr. Roberts, that a fixer "gets in a rut and coasts", as you put it, for that is all he can do if his company insists on that kind of work. But, the fixer is the one who is criticized.

I am reminded now of the "smash-up" related to you by your visitor, Mr. Potterby. His case may be the exception, but I am thinking of those many, many others that aren't. The machine in question is in production. The mill wants it running and so does the knitter, for he is on piece work. Possibly the fixer knows that this machine needs new friction leathers, but the knitter doesn't want it done just now and the system employed doesn't make allowances for the fixer to come back and make repairs when the machine is idle.

In referring to changes in pattern and construction, I do not believe a fixer who grumbles is always wrong. In fact, he knows much more about it than either the salesman or the office force. He is the only one who knows just how long and expensive the change might be. Here again, if he were consulted he might be able to make the same change much more economically than the way he was told to do. After all, fixers are hired for they know from experience which they must be able to apply when the need arises and not for one routine task, such as oiling or keeping production reports.

So, before we take the fixers to the cleaners, let's look on both sides of the ledger. Let's consider all angles and investigate them. I am sure you will find that they, as a whole, are very reasonable and hard working fellows who appreciate agreeable working conditions and place them ahead of wages. Instead of being "tolerated" we are one of the necessary evils of any hosiery mill, but very tolerant with some of the fly-by-night things we have to put up with.

What I mean, Mr. Roberts, is: Give the devil his due on both sides of the ledger, for all ledgers have to balance, don't they?

Sincerely yours,

WILLIE DOAKES

### How to Get Better Method Ideas

You can't expect to get ideas from your men unless you make them realize that their ideas are welcome. It is a very encouraging experience for a man to have his boss ask him for ideas and suggestions. It indicates that the boss has respect for him, and recognizes his worth as an individual, as a person with brains.

If you want to improve methods on a job, go first to the man who is doing the job and get him interested in discovering a better method. Of course, he has his own interests to look out for. If the improved method is going to throw him out of a job he can hardly be expected to make suggestions. The great need today is for better methods which will yield greater production—methods which will eliminate the useless work involved and thus free our manpower for necessary and useful work.—"*Management Information*", *Elliott Service Co., Inc.*

# Some Observations by a Machine Fixer

EDITOR COTTON:

While a few circular hosiery machine fixers like to take a job on a section that has been allowed to run down, I have found in many cases the hard work and vexations are compensated for by the interesting observations and new experience during the first few days on the job. Being a B-5 fixer—and most knitters I have been associated with were women—I have found it really amusing to see what the fair sex will do to their machines in a pinch. So, if you will allow me space in your valuable paper, I will relate three such observations and what I did about it.

Since I needed the "cart wheels" more than I did the catfish, I postponed my fishing trip and took a job hoping to rejuvenate a section consisting of 60 transfer machines of the B-5 Model. It was a bright spring day, and it was hard to forego my little jaunt to the mill pond since I knew the section was in rather bad shape. I found there were 14 knitters on the section, and that made matters look worse. If there had been only four handling the machines it would have been better for me. Nevertheless, I found plenty to keep me interested. The first day I found a machine which would occasionally refuse to budge when the belt was shipped to the tight pulley. The next day I discovered through one of my knitters a new way to dress the pulley face with a pair of scissors. And when the hot months came I found one machine so allergic to rising temperature that it would bend and break needle butts every time the thermometer registered above 90 degrees.

My first "flag" was a machine that refused to start when the belt was shipped to the tight pulley. This was a new experience for me, and at first I was perplexed. I took hold of the crank handle; it was stuck all right; I could not budge it trying to turn the machine forward, but when I gave the handle a quick jerk the drive shaft loosened up and I moved the machine slightly backwards. When I shipped the belt to the tight pulley the machine started and ran as usual. But I was not satisfied; I wanted to know why it stuck.

I found that the driving belt had been run too tight for so long that it had worn the sleeve of the high-speed pulley enough to allow the pinion on the end of this sleeve to jam the teeth of the pinion on stud shaft. This caused the two pinions to wedge or lock when the power was applied. The only thing I could do was loosen up on the tension to a reasonable degree by splicing the belt, instruct the knitter to rock the driving shaft slightly with the crank handle, and trust that it would not be too long before I could get a new sleeve.

The second day on the job I got there about 15 minutes before starting time. All my knitters were at their machines getting things lined up for the day's work. I noticed one of the girls turning her machine by hand, and jabbing the face of the high-speed pulley with the point of a pair of scissors. Out of sheer curiosity, I walked over to the knitter and noted that she had marred the surface of the pulley with numerous burrs with the sharp point of the scissors. When I asked her: "What's the idea?" she replied, looking at me somewhat defiantly, "To make the machine run faster." Obviously the theory was to raise the surface of the pulley so it would "bite" into the belt and prevent it slipping.

Although this was a new trick of the trade as far as I was concerned, I saw right away that it was bad practice, and would not be necessary if the belt was kept properly dressed. "Please don't do that," I admonished. "It will tear the belt and make it wear out long before its time; and picking at that pulley with those scissors will get the face so full of small holes that it will not only wear out too fast, but the rim will be unbalanced; and a pulley unbalanced is always dangerous."

"But," she protested, "I can get two or three more dozen a day by doing that."

"Not if the belts are kept clean and properly dressed," I assured her. Then I took a look at all the belts while the counter-shaft was still standing, and found them very dry; some had begun to crack on the surface. And the pulley side was sticky or had lint clinging to it. So, I started looking for a small piece of rubber hose and some neatsfoot oil.

I found a small piece of garden hose—the furrowed kind—about 6 inches long, in my tool box. This was just long enough to give me a good grip with both hands as I pulled the rubber firmly against the pulley side of the belt. I find this the best means of cleaning belts since it doesn't scratch the belting as a wire brush does. When I got my hands on some neatsfoot oil I gave every belt on my section a liberal dose once each week, which I applied with a small paint brush. This oil treatment greatly prolonged the life of the leather belting, made it more flexible, the belt hugged the pulley more snugly, and consequently greatly reduced slippage.

After a week or two, I got my 60-machine section in shipshape, and everything ran smoothly until the first of July when the mercury began to soar from 90 to 96 in the knitting room. This seemed to disturb one of my machines very much. This machine would bend and break needle butts occasionally, and invariably when the knitting was in the heel or toe. The first thing I did was to look for a loose cam. I examined the right-hand stitch cam, but saw nothing to indicate it was loose. On one occasion I happened to notice that the screws holding the right-hand stitch cam were slightly smaller than those of the left-hand cam. Presumably they were screws intended for cams of a different model or possibly a different make of machine, and had been placed in this cam through mistake. When I tapped the cam lightly with my screwdriver I found it was loose. I replaced these screws with regular size ones, and I was not bothered with the temperamental machine any more. But, why did the cam work loose only in hot weather? Here is my theory: When the room temperature was moderate, the metal did not expand enough to affect the grip of the screws, and the cam remained firmly in place. But, when the room got hot enough the metal cam expanded, left too little surface for the screws to hold, and the back-and-forth movement of the butts

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naturally worked the cam loose.

Yes, a run-down section is naturally shunned by the floating type of fixer who is likely only interested in getting by and drawing his pay; but for one not afraid of the hard way, the run-down section furnishes interesting experience, and is a good test of his ingenuity.

CONTRIBUTOR No. 7443

# Flexing Needle Stems

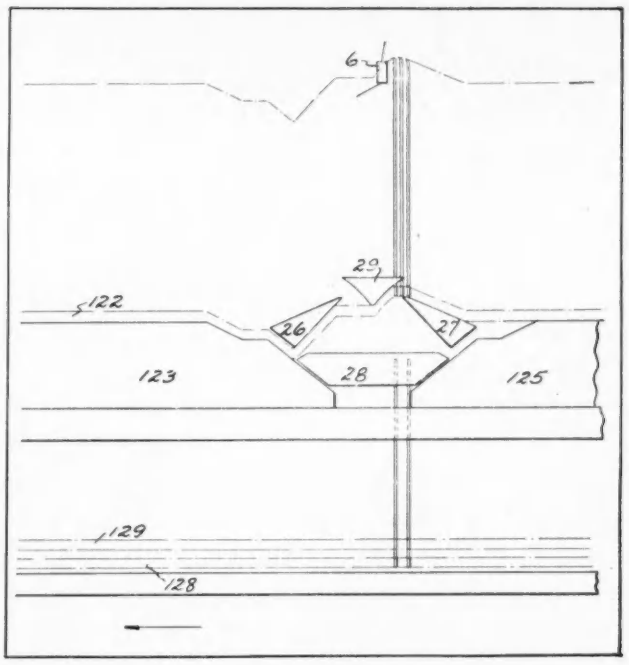
EDITOR COTTON:

I have often wondered why so many fixers bend the stems of latch needles when they put them into the groove. Of course I know the needles must be flexed to a certain extent to eliminate play between the walls, but they are already flexed enough when they come from the factory. And, besides, they are flexed by machine and therefore more uniformly than could be possible by hand.

It may be feasible to bend the stems more when the new needles happen not to correspond to the gauge intended for the machine. For example, when 39-gauge needles are the only ones available for a machine of 36-gauge. Then, on old machines, the needle walls might be worn to such an extent that it might be necessary to bend the stem more; but normally I think the needle is already flexed enough when new, and any additional bending only causes undue friction, excess power to drive the machine, and hastens the time when the cylinder must be re-walled.

It is my opinion that too many fixers do not understand exactly the motive for bending the lower part of the needle stem before putting it in. Many seem to think the idea is to put friction between the needle and walls so the needle will not move up and down too freely and get out of line. This is true to a limited extent, but the main object is not to keep the needles from getting out of line vertically. Other fixers perhaps bend the needles through force of habit, or have an idea that if a *little* bending is good, more will be better.

A look at the accompanying diagram, which is the cam lay-out of a popular make of circular machine, will show that provision is made to keep the needles at the proper level. The dot-and-dash line (122) represents the path traveled by the needle butts. As the butts move from right to left they leave the cam (125) and are gradually elevated by the rear stitch cam (27) into position to receive the yarn at feed (6). If any of the butts should move too high they will be promptly caught by the right-hand face of the center cam (29), and brought down low enough to take the yarn. If a hook on some needle happens to be broken off and is not held by the yarn, the center guard cam (28) will prevent it from dropping too low when the butt is quickly cammed down by the front stitch cam (26), and it will join the other needles as it reaches the cam (123) to be elevated for another cycle.




The spring bands prevent radial play of the needles; so the main object of springing the needle stem near the butt is to cushion the shock when the butt strikes the center cam and the front stitch cam. Therefore, excessive bending or flexing of the needle would be a hindrance more than a help towards this end, besides causing rapid wear of both needles and walls, to say nothing of unnecessary power consumed by the machine.

CONTRIBUTOR No. 7442

### Rayon's War Effort Contributions Increasing

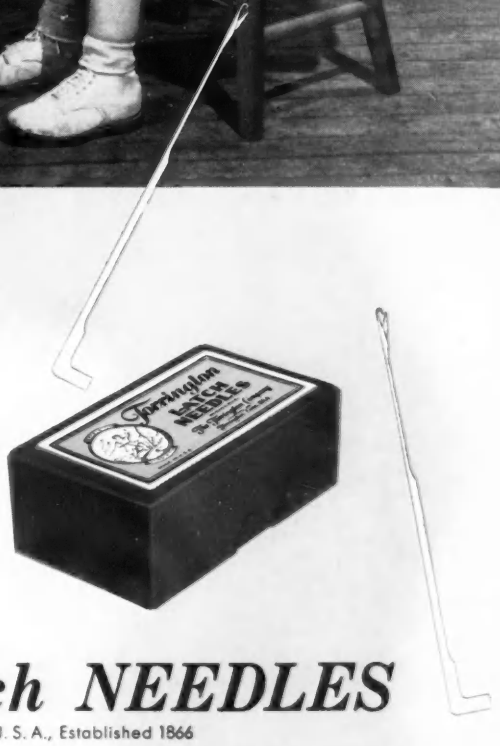
The rayon industry's participation in and contribution to the war effort is increasing month by month, states the current issue of the *Rayon Organon*, published by the Textile Economics Bureau, Inc. Rayon is now going into a wide variety of war products such as tires of all kinds, fragmentation and cargo chutes, uniform linings, etc. In addition, the industry has been called upon to take over all of the civilian markets formerly supplied by silk and nylon. Staple fiber is also allocated for use in the worsted industry, and more recently has been rated for use by blanket manufacturers.

"All of these contributions of rayon to the war effort are handled either by rated orders or by allocation," adds the publication. "And, in general terms, all of this rayon must be taken from former civilian goods weavers and knitters inasmuch as it has been impossible to expand spinning capacity of the industry because of a shortage of new equipment facilities.

"During the first quarter of 1943, it is estimated that these allocated and war uses of viscose and cuprammonium rayon yarn took 45 per cent of the total poundage produced. The further conversion of viscose rayon to the high tenacity type of tire cord, as well as increasing uses of viscose and cuprammonium yarns for other uses, will raise the future war and allocated uses of these yarns to substantially higher levels this year."

It is also estimated that about 15 per cent of the acetate rayon yarn output and 15 per cent of the staple fiber output is currently being used for war purposes or allocations and further increases in these percentages are expected as the year progresses.

***Attentive,*** also, to quality and durability in children's socks are a growing number of parents in these times when all clothing must do long duty. One of the basic factors in quality and durability is good knitting, and only fine needles, uniform in all important details, can give assurance of consistently good knitting. Let Torrington Needles, *machine-made* and *machine-tested,* help you keep your knitting standards up to the level that has established your reputation.

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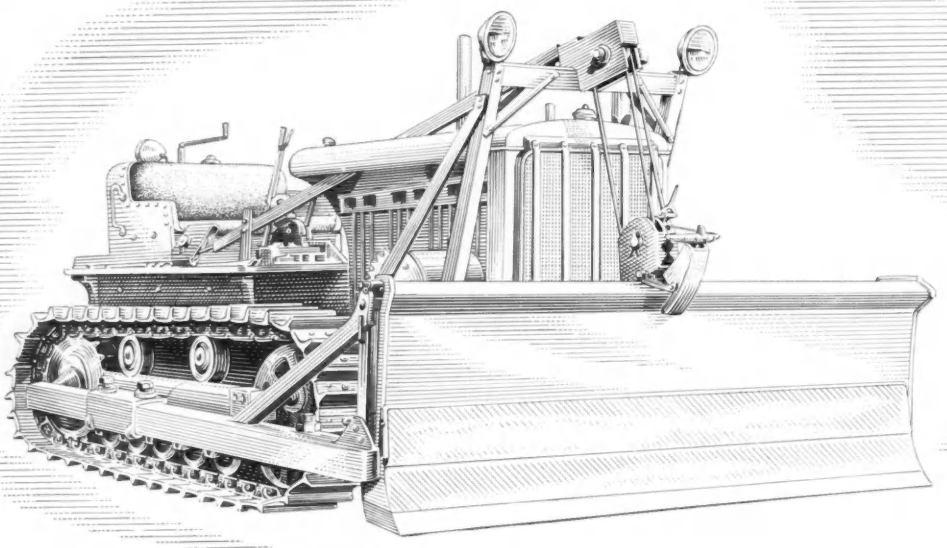

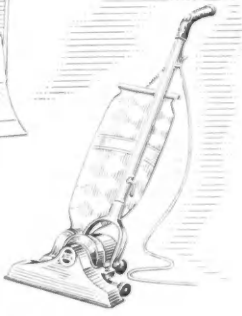

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# TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

## Nylon Stockings Expected Quickly After War—New Hose Constructions More Durable—Predicts 10 Per Cent Full-Fashioned Hosiery Production Drop—Underwear Supply for Civilians Greatly Reduced—WPB Amends Hosiery Order—Small Hosiery Mill Group Installs New Officers—Hose Shipments Register Gain

**Philadelphia, May 16, 1943**

SHIPMENTS of all types of hosiery showed a gain of 3.4 per cent in the first quarter of this year compared with the same three months in the preceding year and during the same period the full-fashioned section of the industry registered a shipment gain of almost 10 per cent. In contrast, sharp losses in shipments were reported in the same period by makers of children's and infants' lines, this being almost 33 per cent under the first 1942 quarter; smaller shipments were also made by makers of anklets and women's seamless. In March, 1943, shipments of rayon constructions accounted for more than 90 per cent of total shipments of full-fashioned lines and 65 per cent of shipments of women's seamless, excluding knee-length and ribbed goods. While shipments of most hose lines have been expanding, recent data covering underwear show a contrasting trend, the Department of Commerce report for February was down conservatively compared with the first month of 1943. This was true in both military and civilian lines. At the same time surveys indicate that stocks of underwear in the market are exceptionally small.

### Full-Fashioned

Shipments of women's full-fashioned hosiery in March were up almost 19 per cent over the same month a year previous, according to National Association of Hosiery Manufacturers data. This gain came at the same time that members of the American Federation of Hosiery Workers at their annual convention heard a report that 1943 production of full-fashioned lines would show a reduction of about 10 per cent compared with 1942. It was stated in the union's survey that we can look forward to from 28 to slightly more than 30 million dozen pairs of rayon hosiery but the shortage of skilled workers in this branch of the industry was pointed out as a factor that would come into greater prominence as the year goes on, affecting production. War Production Board does not expect the new rulings on hose construction will make major changes but it does expect that these changes will result in a saving of about 15,000,000 pounds of hosiery yarns each year and at the same time maintain and improve the durable qualities. The trade expects that at the end of the war not only will it be possible for the hose trade to obtain nylon yarns again for women's full-fashioned but also that war changes will make for an even better yarn and hose than in the pre-war era. Officials of the du Pont firm have said that the change from war nylon to that required for the making of women's stocking yarns will be a very quick one. The financial outlook for hose firms under ceiling rules is not regarded as promising as if there were no such price levels fixed, this being expected even though there will be some saving in yarns under the new WPB construction rules. Hose firms that are working on war orders either for stockings for women in the armed forces or that have converted to making other war items are not expected to make a high margin of profits on such work. The outlook is that profits will not be any larger this year than last with most and fair chances that these will be somewhat smaller. Initial 1943 reports indicate the latter a trend in the first quarter.

### Half-Hose

Manufacturers of half-hose including the short length types, aided by large military orders, have been busier during the first three months than in the same months of 1942, the average gain being almost 12 per cent so far as shipments were concerned. In March this year such shipments registered a gain of more than 15 per cent compared with a year previous. Indicative of the recent large half-hose business placed by the local Army Quartermaster Depot were contracts covering more than 23,000,000 pairs of tan mercerized socks which was the amount sought, indicating the industry is co-operating in this work even though there is great discussion in the trade regarding ceilings on both cotton yarns and hose. Another recent large military half-hose order was 27,000,000 pairs of lightweight wool type on which bids were received May 10 by the Army. On these knitters had the option of using any of six different types of yarns. Profit margins of such mills have been narrow due to higher wage levels in the face of unchanged goods prices.

### Seamless

Women's seamless hosiery has been a laggard compared with improvement displayed in other sections, shipments of these for the first quarter registering a drop of 7.6 per cent compared with the same months a year previous while for March alone they were down 3.7 per cent compared with the same 1942 month. Shipments of anklets for the first quarter of this year were down 7.3 per cent while those of children's and infants' numbers dropped more than 32 per cent, the most severe decline of any branch. Wage rates over the last year in such mills have displayed a strong upward change, the average being up more than 15 per cent and at the same time there has been a lengthening of the work-week of 5.6 per cent in northern plants and 1.6 per cent for workers in southern mills. Notwithstanding the shipment drop this trade regards future volume as promising.

### Underwear

At the same time the Department of Commerce reported a declining trend in underwear production, a survey among wholesalers of the country showed stocks of heavy goods for next winter were at an exceptionally low level, these in instances being so low as to indicate a serious condition in some sections of the country by next winter. The shortage is especially serious in infants' underwear and in these it is feared in some quarters that there may be a shortage of major proportions by the time cold weather comes around again. On the demand

end not only is civilian interest at a high level due to the fact employment is at such a high level, but there is the enormous call for these garments from the armed forces, this interest continuing at the previous record level; then, too, there is the demand made upon such manufacturers by our allies, including garments wanted for Russian Relief and the English Purchasing Commission. With demand at an all-time high mark manufacturers claim they are being impeded by the ceilings on such garments that tend to make them cautious in expanding machine rates. One said in this regard there is no incentive to expand production when this means that you lose that much more. Department of Commerce reported that February production in the knit cotton and wool division was down from that in the previous month. Total production in the knit cotton and wool division for this February was 3,020,000 dozens which compared with 3,161,000 dozens in January. Shipments also were off and the comparison included goods taken by the armed services. Wholesalers say they have only been able to place about 10 per cent of their regular orders with the mills in recent weeks so that the outlook for the next months in the civilian end of the business is very dismal. Underwear manufacturers are also having great difficulty in getting deliveries of any worthwhile amounts of sales cotton yarns, even in instances where such contracts enjoy high priority ratings.

## Deferment Denied for Hosiery Ceiling

The campaign of the hosiery industry to postpone the effective date for the dollars-and-cents ceiling prices for women's rayon stockings was lost when Price Administrator Prentiss M. Brown announced that the ceiling would go into effect as scheduled May 15. Replying to a telegram from Earl Constantine, president of the National Association of Hosiery Manufacturers, Mr. Brown said that while there will be no postponement of the effective date, the regulation will be scrutinized over a period of three or four months to determine how the trade makes out during this initial period under the regulations. He promised that if inequities are demonstrated changes in the rayon hosiery ceiling will be made. Mr. Constantine, in behalf of a special committee of the hosiery industry, had requested the Administrator to give consideration to postponing the effective date of the regulation for a month.

Mr. Constantine also requested that OPA "take the necessary steps to assure that the added time thus captured will be fully utilized toward a re-examination of the grading and pricing provisions of the regulation, with the purpose of making them conform with the established practices of the industry and its market and of assuring their adequacy." In assuring Mr. Constantine the regulation will be re-examined after three months Mr. Brown outlined the following program: The whole question of price differentials and classifications will be closely re-examined for any unfairness that results; serious consideration will be given to the proposal of certain manufacturers that one or more classifications should be set up for "AA" hosiery having additional features and giving the stocking greater value than "Grade A" hosiery as outlined in the regulation; the industry is invited to consider the advisability of permitting manufacturers to use the words "Grade A or better".

## FORECAST

(Opinion submitted by COTTON'S market correspondent)

**Philadelphia, May 16, 1943**

ALTHOUGH MOST textile manufacturers are operating at all-time capacity rates in their sincere attempt to produce goods for the armed forces and for the civilian needs of this and allied nations under lend-lease, many such firms are doing this large volume of business without making much money. There are reasons for this, the most impelling being that no one wants to get rich in a war for our existence with the Government placing brakes on the profit motive in the form of price ceilings to say nothing of the threat of re-negotiation on military contracts. But in regard to this phase of war economics many manufacturers point out that excess profits tax takes care of most instances where there is danger of excessive rates on military items so they really see little net benefit to the Government on re-negotiation.

But with the handicaps of doing business at a profitable level now great, manufacturers of most textiles are looking ahead with great expectations to the post-war period, feeling that their position at that time will be greatly improved although earlier in the war there was fear in the industry that the profit motive and capitalism were in great danger. There has been a change in the outlook, esp cially since Congress has been acting as a brake on the more radical plans of some in the Administration and also with the country itself adopting a more conservative pattern of thought. This change is expected by industry to ease the restrictions on manufacturers in the post-war period and not only do they look ahead to an unbelievable volume of business when they can take care of huge civilian demands of this country but also through shipments that will go out to he p clothe the civilian populations of numerous other countries of the world. Our steps in this direction in North Africa are only the beginning.

Not only is volume expected to be of unheard-of proportions in the post-war world but manufacturers expect an easing in the tax situation. Taxes will be lowered although n ot nearly to the pre-war level but with large volume they will be low enough to permit such firms to make much more money than now. Unheard-of demand from the civilian population of the United States is due because at the end of the war we will have enforced savings built up that will be called upon to pay for clothing and textiles among other things such as refrigerators, automobiles and airplanes. So far as lend-lease is concerned, funds to pay for the goods shipped will at first come out of the United States treasury but later on the countries will reach a stage where they are expected to be able to finance themselves.

Whether such a picture of the future is built upon sound and permanent foundations is not the question at this time, but rather the generally accepted view that the future will be a very busy one for textile manufacturers. America will try to clothe the world, indications are at the end of the war, and the trend toward more conservatism in the United States will see to it that capital gets a larger share of the total than is possible under war conditions. One danger developing is that under war conditions our machinery equipment will have to undergo a great amount of repair. This requires time and capital.

## OPA Amends Rayon Hosiery Regulation

Office of Price Administration on May 7 issued a number of changes in standards of construction, provisions for temporary marking and pricing of women's rayon hosiery now in stock for the purpose of making MPR No. 339 more workable. Specifications for Grade A hosiery were modified in several minor respects so that a greatly increased quantity of Grade A hosiery would be made available without substantially affecting the quality. These changes were worked out with the War Production Board and were in accord with suggestions of the industry. In response to industry representations, temporary pricing and marking provisions were established to permit retailers and wholesalers to mark and sell their goods on a simplified

and staggered system over a period of the next two months, as a means of avoiding considerable inconvenience in the marketing of hosiery manufactured prior to the issuance of the hosiery regulation.

Hosiery that is either Grade A or Grade B may be sold at the dollars-and-cents ceilings for Grade A hosiery at wholesale and retail during the following periods: For sales at retail, May 15 to July 15 inclusive, and for sales at wholesale, May 15 to June 15 inclusive. Grade B hosiery—stockings which do not meet the minimum specifications for Grade A—must be sold at Grade B prices on and after the following dates: For sales at retail, July 16; for sales at wholesale June 16 and for sales by manufacturers May 15. Retailers from May 15 to July 15 must mark on each pair of rayon hosiery the gauge or needle count in the case of circular knit hosiery and the ceiling price. The wholesaler from May 15 to June 15 must mark grade and gauge or needle count in or on each pair of hosiery or on each box containing a dozen pairs or less.

## WPB Lists Cotton FF Hose Specifications

Beginning May 15, the War Production Board brought under control in order L-274, full-fashioned cotton hosiery that is produced in quantities approximating 2,500,000 dozen annually. At the same time the amendment gave assurance that full-fashioned rayon stockings will wear longer through the requirement that such hosiery must now have cotton re-inforcements in the toe as a check against too rapid wear. In establishing minimum specifications as well as standards for length and area of heel splicing, the schedule made no major change from current manufacturing practices except that very fine cotton yarns which have not been found serviceable or durable were eliminated. In the 45- and 48-gauge, for example, the maximum permissible fineness of cotton yarn is 100s two-ply in the leg and welt while a heavier yarn, 60s two-ply, is required in the toe and heel. Equivalent single yarn must be used in place of the two-ply yarn if the single type yarn is used.

Length of full-fashioned cotton hosiery cannot exceed 30 inches with a permitted 1 inch tolerance and length of the welt is limited to 3½ inches. Splicing of the heel must measure 4½ inches with a permitted ½ inch tolerance either way. The schedule prohibits lace bands, lace stripes, fancy designs or numbers in the welt or afterwelt, while picot stitches except for the top ½ inch of the welt cannot be placed more closely than ¾ inch apart. Other changes made in the order were that re-inforcement of men's rayon hosiery with cotton yarns in the sole is now permitted; the length tolerance of women's seamless hosiery was increased from 1 inch to 1½ inches; 50 denier rayon yarns were defined as having a tenacity of 2.3 grams per denier or higher; restrictions on welt construction in full-fashioned rayon stockings were relaxed slightly to permit the use of certain patented types of welts.

## Shortage in Wholesale Underwear Supplies

Stocks of heavy underwear with wholesalers throughout the country have reached such a low level as to indicate a serious shortage for the retail season next fall and winter, according to a recent survey. The survey covered wholesale distributors of the entire country and men's, women's, children's and infants' lines. Many replies to the questions showed that a considerable number of wholesalers have hardly any stocks at all because they were practically cleaned out during the long cold winter this year together with the fact that they could not fill in with the mills in anything approaching their normal volume. Several such firms reported that their stocks are not over 10 per cent of last year. It is not uncommon to find distributors who have not been able to buy any underwear to date for the coming fall while a few report having been able to place commitments of about 50 per cent of normal.

Since last September the underwear trade has been seeking relief from what they claim to be inequitable ceilings on seasonal fall underwear first imposed in the General Maximum Price Regulation and later in MPR No. 221. The latter was represented by OPA as designed to give relief from the unfair price ceilings imposed by GMPR. However, industry leaders point out that No. 221 rolled manufacturers' prices back to those of early 1942 when mills first priced merchandise to the customers for the fall of 1942. Since then all costs have advanced sharply including labor of about 15 per cent, higher yarn prices have been imposed and there have also been increased overhead costs due to the lack of manpower and consequent high labor turn over. The industry has sought relief from these conditions but up to the present time this has not been granted by OPA which has proceeded to plan ceilings on a dollars and cents basis with standardized garments as the determining factor. The industry has opposed OPA pricing policy on the ground it did not take sufficient account of the diversified set-up of this particular industry.

## No Major Changes in Women's Hosiery

The point is made in Washington that when selecting stockings to be made under the new rulings of the War Production Board, women will notice very little difference between the new types and those they formerly bought. The new regulations were designed to make them wear better and last longer and through simplification of all types of hosiery, WPB expects to save about 15,000,000 pounds of hosiery yarn a year. Plenty of sheer stockings will still be made but it is planned that even this type must give reasonable wear and as most manufacturers have sometime ago reduced their color selections, the WPB color rulings will make little difference at the retail counter. Five colors are permitted at one time in any one style and a manufacturer is allowed seven basic colors for each half-year period. In misses' socks the color decline is sharp, the normal range of more than 30 colors being reduced to a basic seven. Novelties may not be made in more than four colors; extra long or extra thick cuffs are prohibited for anklets.

## More Nylon Styles Expected After War

Nylon plants of duPont upon the termination of the war will be able to shift from the production of parachute to stocking yarns within a very short time. This will be largely a matter of reducing the number of holes through which the molten nylon is forced so as to produce fewer filaments and therefore finer yarn. It is predicted that in the post-war period an even wider choice of weights, styles and sizes will be available than existed before nylon was drafted for the duration. It is expected that non-run mesh types which were introduced before the war will gain greater public favor and it is also predicted that heavy-weights for sports wear, weights for nurses and other types of special hose will not be neglected; also proportioned sizes which were supplied on a limited scale will become more generally available.

Nylon, in addition to permitting hosiery manufacturers to do things they never could do with silk, has also permitted them to turn out a high quality seamless stocking. Seamless silk stockings in many instances did not fit well at the ankle and bagged after they had been worn a while but seamless nylons are pre-set at the mill and retain their shape just as full-fashioned does, fitting snugly after many launderings. Predictions are made that bare-leg seamless nylons that

were just coming into larger supply when the war developed will find an important place in the style picture. Even though manufacturers will be able to turn to nylons quickly after the war it will take a reasonable time to re-stock wholesalers and retailers throughout the country.

## Becker Says OPA Set on Pricing Plan

Norman Becker, head of the knit goods section, Textile, Leather and Apparel Division of OPA, said that dollars-and-cents pricing and standardization is one of the major programs of OPA. Speaking at the annual convention of the American Federation of Hosiery Workers in New York, he said this is the most effective method of price control as dollars and cents prices are practically self-enforcing. He said one means of curing a black market is well-publicized dollars-and-cents prices which become known to every consumer. On the subject of rayon hosiery, he explained that the standards of construction of Grade A hosiery had been prepared by OPA in consultation with WPB experts as well as industry consultants. It was his opinion that a large part of the present hosiery on the market will meet the standards set by MPR 339.

## Underwear Production Shows Slight Decline

Department of Commerce data as released for February of this year showed that underwear production was smaller than in the previous month, production in the knit cotton and wool division amounting to 3,020,000 dozens which compares with 3,161,000 dozens in January. Shipments also were off, being 2,969,000 dozens for February compared with 3,139,000 dozens in January. Stocks with mills at the end of February in this branch of the industry were 2,478,000 dozens compared with 2,557,000 dozens in January. This change in February applied to both Government business and civilian. For example, in the heavyweight shirts and drawers production this February was 347,000 dozens for the Government in garments of 25 per cent wool and higher and 79,000 dozens for garments of less than 25 per cent wool. These figures compare respectively with 370,000 dozens and 87,000 dozens in January. The statistics showed insignificant figures on production of heavy shirts and drawers in February for civilian needs, confirming the results of a survey which indicated a serious reduction in the amount of heavy underwear going into regular channels from knitters. Large Government needs have priority in the way of mill production but there is widespread feeling in the trade that if OPA would adjust ceilings the amount of goods turned out would have been considerably greater.

## Union Predicts Drop in FF Hose Production

Production of full-fashioned hosiery this year will be about 10 per cent less than last year and the amount of rayon yarn to be received by the industry will probably be no less than the average receipts during recent months. This statement was made at the annual meeting of the American Federation of Hosiery Workers and the report went on to state that, "We can look forward to from 28 to slightly over 30 million dozen pairs of rayon hosiery as augmented by the English cotton for welts and feet of rayons and a production of approximately 2,500,000 pairs of all-cotton and mixtures." The report added that employment in the full-fashioned industry dropped 31.7 per cent from March 1941 to the end of 1942. The statement was also made that production will be achieved this year only by the full utilization of overtime not only in the unionized portion of the industry but the non-union portion as well. The natural drain of labor out of the industry, the current rate of labor turnover, and the depth to which the Selective Service Act will reach into our industry, will leave us with a greater shortage of skilled and semi-skilled labor than at any time in our history."

## Cheney Says Underwear Supply Greatly Reduced

Roy A. Cheney, president of the Underwear Institute, predicted that the supply of heavy underwear for civilian use during the next winter will be considerably smaller unless the Office of Price Administration acts quickly to make an adjustment between cost of production and price ceilings for underwear manufacturers. He indicated that delay up to date will be sufficient to cut down next winter's underwear supply. "The situation is particularly serious as regards children's and infants' underwear," Mr. Cheney said. He added that the demand for underwear has greatly expanded as a result of the war and that the armed forces in 1942 purchased approximately 30 per cent of the production of all mills during 1942. Civilian demands for underwear have also been increased sharply by additional outdoor employment, curtailment of transportation facilities and reduced household fuel supplies. He said in wartime with people susceptible to colds, a shortage of underwear creates a great problem in national health.

## Army Depot Explains Plan Covering Rejects

Col. Thomas W. Jones of the Philadelphia Army Quartermaster Depot, in a letter to the Underwear Institute, stated positively that prime and subcontractors must first offer to that depot all material obtained by means of a preference rating assigned by that depot regardless of whether such materials meet Government specifications or whether they are seconds or rejects. In effect the depot warns the industry it must submit all rejects to the Government before offering them to regular customers as has been the practice heretofore. The letter said in part, "It may be stated that shortages existing in the manufacture of some types of fabrics and garments has become so acute that it has endangered the Army program. As a consequence it has become necessary to accept what normally would be seconds and rejects. In view of this critical situation it does not appear to be asking too much for the contractors to offer such seconds to this depot before disposing of them through normal outlets."

## New Hose Group Elects Officers

Independent Hosiery Manufacturers Association, which maintains headquarters in Philadelphia, is the name of a new group consisting largely of small hosiery mills located in Pennsylvania, Delaware, Maryland and New Jersey. At a meeting at the Hotel Philadelphian May 8, Robert E. Freidrich, Jr., of l'Opera Hosiery Mills, Glassboro, N. J., was installed as the first president. Thomas L. Johnson, of the Tohickon Hosiery Mill, and the Alka Hosiery Mill, Lewes, Del.; Frederick Weston of Weston Silk Hosiery Mill and Del-mer Hosiery Mill, Elkins Park, Pa.; William Juenelle, Doylestown (Pa.) Textile Mill; Alfred Zabel, Jr., of A. Zabel Silk Hosiery Mill, Willow Grove, Pa., have been chosen vice presidents.

John Beck, Mor-Rec Hosiery Mill, Perkasie, Pa., is treasurer and Edward M. Rand, executive secretary and counsel, with offices in the Market Street National Bank building, Philadelphia.

Board of governors is composed of George McKinney, Jeanette Hosiery Mill, Elkins Park, Pa.; Walter Semdy, Paxon Hosiery Mills, Wyncote, Pa.; Curt Butz, Horn & Butz, Blenheim, N. J.; Albert Horn, Horn & Butz; John Beck, Thomas L. Johnson, Harry Gottlieb, Westmont (N. J.) Hosiery Mill; Robert Leopold, Alert Hosiery Mill, Rockledge, Pa.; Howard Faust, Gold Seal Hosiery Mill, Reading, Pa.; Walter Viehweger, Davisville (Pa.) Ho-

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siery Mill; John Schneider, Schneider Hosiery Mill, Philadelphia, and David E. Heisley, Magnolia (N. J.) Knitting Mill.

## Interwoven Hose Plea Rejected by OPA

Office of Price Administration after considering the matter for ten months denied an application of the Interwoven Stocking Co., of New Brunswick, N. J., for permission to increase wholesale prices of certain of its line. The company filed its original protest June 27, 1942, charging that the price regulation illegally prevented continuation of its practice of selling to retailers under re-sale price-maintenance agreements on a seasonal basis. The Interwoven protest contended the act is unconstitutional because it does not control wages and grants special treatment to farmers; that both act and the regulation are invalid because they attempt to control local transactions; are confiscatory, impair the obligation of contracts, are ex post facto, and are too indefinite. Holding that the objections to the regulation are without merit, the OPA remarked that, "Consideration of the objections to the act is unnecessary since the administrator assumes its validity." The Interwoven protest sought permission to increase the wholesale of its "3,000" series from $3.15 to $3.60 a dozen and its "5,000" series from $4.40 to $5.25 a dozen, and at retail from 45 to 50 cents for the one and 65 to 75 cents a pair for the other.

## Nebel Receiver Plea Withdrawn

Action in which Arthur Nebel and his wife were plaintiffs against William Nebel, head of the Nebel Knitting Co., manufacturers of full-fashioned hosiery in Charlotte, N. C.; Mrs. Nebel, the Nebel Knitting Co., and directors of the company, ended when both sides agreed to settle their differences out of court. Arthur and his wife asked damages totaling $100,000 of William Nebel, his father, and Mrs. Nebel, his step-mother. They also demanded that a receiver be appointed for the company but withdrew this in the last trial. In agreeing to settle their difficulties out of court the plaintiffs agreed to withdraw all their claims against the defendants and the defendants agreed to withdraw a counterclaim for $65,000.

## Mortality Rate of Small Hose Mills

The mortality rate among the smaller full-fashioned hosiery mills in southern New Jersey and northern Pennsylvania during the past year amounted to 9 per cent in actual liquidations, according to a recent survey. In addition, there was another 9 per cent which closed for the duration. Included in the survey were 57 mills in this district with an average number of 12 knitting mills each. Of the active machines in April of the group only 53 per cent were running on a second shift and during the past year the productivity of these mills was reduced by 26 per cent, based on machine activity and shift operations.

◆

### Book on Synthetic Rubber

United States Rubber Co., 1230 Sixth Ave., New York City, which has placed in operation the world's largest synthetic rubber plant at Charleston, W. Va., has used all available types of synthetic rubber in its products since 1932, according to a new booklet of the company, "The Five Commercial Types of Synthetic Rubber."

The book traces the development of synthetic rubber from its laboratory beginnings, describes the properties of the commercial synthetic rubbers, and relates briefly the part played by the company in their development, manufacture and use in its products. It includes photographs of synthetic rubber manufacture, many diagrams, and a chart compiled from the experience of plants and laboratories of the company, giving the relative physical and chemical properties of natural rubber and of the five types of synthetic rubber.

◆

### Defense Testing Course

United States Testing Company, Hoboken, N. J., has announced plans for its fifth consecutive yearly summer course in textile testing, which will put emphasis on defense testing procedures and fabrics related to the war effort, and students will be made acquainted with A.S.T.M., U. S. Government, Army, Navy and other standards. Instructions will cover fiber, fabric and clothing analysis, manufacture and testing. The identification, origin and nature of the natural fibers, older and newer synthetics, such as the rayons, casein, Vinyon, nylon, Fibreglas, and sample swatches for reference will be included. The testing of woven and knit fabrics for such factors as construction, thread count, fiber identification, tensile strength, seam slippage, color fastness to light, washing and drycleaning will be the basis of this defense testing course. A study of the new testing equipment recently developed, such as the warmth tester, snap tester, crease resistance and crease retention devices, and various shrinkage equipment, will also be an important part of the course.

The classes will be held during the company's business hours and will be in session from 9:00 A.M. to 4:00 P.M., from July 12 through July 30. A small fee will be charged to cover supplies, etc. The students will have the personal instruction of the company's staff technicians, working under the direction of G. R. Turner, supervisor of the company's textile laboratory and instructor of a course in textiles at Columbia University.

◆

### Do Your Men Come to You with Their Problems?

This is a pretty good test of whether or not you are doing a good supervisory job. If your men feel that you are interested in their problems, if they are sure that you will try to do something about them, they will bring their problems to you. If they go to someone else, it is because you have not earned their complete confidence. To do a good job of helping workers with their problems:

1. You must know your workers and have full facts as to the problem.
2. You must be sympathetic and uncritical in listening to them.
3. You must be unemotional in your reactions.
4. You must respect any confidences received.
5. You must let the man feel that you are treating him as "man to man."
6. You must try to give helpful suggestions which have a specific bearing on the problem.
7. If you promise to give him a decision or further suggestions or help in a few days, keep your promise.—*"Management Information", Elliott Service Co., Inc.*

◆

### How to Improve a Job Method

In setting out to improve job methods, tackle just one job at a time. Study that one job carefully. Start out by listing every detailed operation performed in the job, just as the job is now being done. Then, thoroughly question each detail of the job. Find out why the detail is necessary, whether it is being done at the right time. Determine whether it is performed by the best qualified person. Consider whether the operation can be performed in a simpler, easier, safer way. Simplify each detail of the job. Work out a better way to do the job.

Then, be sure that you actually follow through and apply the improved method and see that it is followed until a still better way can be developed.

Make a plan to do this to every job you supervise. You will undoubtedly be able to make some time-saving improvements that are very worthwhile. —*"Management Information", Elliott Service Co., Inc.*

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# TRENDS—YARN MARKETS

## OPA Raises Ceiling on Combed Yarns for Military Use Only—No Advance May Be Expected in Carded Yarns for Civilians—Worsted Knitting Yarns Selling More Freely but Mainly for Military Use—More Rayon Yarns Going into War Goods

**Philadelphia, May 17, 1943**

ALL TEXTILE yarns markets are active with producers well sold ahead but pressure on the buying side, if any different, is toward less activity so far as new orders are concerned. This is mainly due to the fact that spinners are not offering much new poundage rather than to the unwillingness of manufacturers to cover. In cotton yarns this is particularly true, spinners not being willing to sell more than a few weeks ahead in most instances because of the refusal of OPA to grant them wanted ceiling relief; the only such relief so far granted has been in combed yarns for military work and none is immediately expected in such counts for civilian use. This makes offerings scarce as spinners do not want to expand their volume when losses are encountered. In worsted yarns, production in the first quarter of this year was about 25 per cent ahead of the same weeks a year previous due to more military goods of the knitted type now being bought and also because spinners have been offering them for civilian goods more freely than a year previous. In rayon yarns, demand is as heavy as ever with a larger percentage going into war goods of one kind or another. The outlook in rayon is that the civilian end of the business will find itself progressively with less rayon yarn than in the past, production being almost fixed for the duration.

### Cotton Yarns

To enable the military services to obtain full procurement of fine cotton goods, the Office of Price Administration on May 3 increased by approximately 6 per cent the ceiling prices for sales of combed cotton yarn for military procurements. No increases were provided for sales of yarn for civilian use because such price changes, OPA stated, would affect the cost of living and would be contrary to the President's "hold-the-line" order which made it imperative that price increases on civilian goods be examined with the utmost care. Issuance of this ruling on combed yarns was disappointing to the spinning trade for two reasons. In the first place, combed spinners declared that the advances should have also been made to apply to yarns for the civilian trade in view of the substantial losses which such producers claim existed in most of their counts.

In the second place, they said that the increases permitted on their yarns for military uses did not cover advances in their costs over recent months, several spinners claiming that they had been suffering losses of 5 to 7 cents a pound on 30s single on which the OPA only advanced the ceiling 3¼ cents. In view of this continued dissatisfaction among the spinners with the 6 per cent advance on military yarns only, offerings of combed yarns have shown no improvement since the OPA order was issued and a number in the spinning trade feel that in the near future it will be necessary for that Government agency to revise again the ceiling rules. Not only has the spinning trade been dissatisfied with the advances but on May 12 the OPA issued a clarifying statement which instead of clarifying the situation made it much more uncertain in the opinion of a large number in the spinning trade. This clarification stated that very definite restrictions applied to the Government agencies and persons who may pay the higher war procurement ceilings established about a week previous by OPA.

This clarification said the mere fact that a purchaser of yarn has a Government contract or sub-contract or has a contract bearing a preference rating, does not entitle him to pay the higher price, as OPA explained. For information as to the conditions under which agents will be designated and the means by which they will be appointed, purchasers of yarn should make inquiry of the procurement agencies by whom their product will be bought. The clarification also stated that commercial sellers are warned by OPA that sales at the higher prices are not permitted unless the purchaser is a war agency or has received a specific designation as agent from such a war agency. War procurement agency means the War Department, Navy Department, the Maritime Commission and the Lend-Lease section of the Treasury Department, Procurement Division.

Further disappointment came to the sales cotton yarn spinning trade when early in May the OPA also announced that no general upward adjustment of yarn and textile prices was under consideration. It was explained that the President's anti-inflation statement clearly meant that no price increases in yarns and textiles can be sanctioned. Any general upward revisions, it was explained, could not be made without affecting the cost of living. The "hold-the-line" statement as it pertains to yarns does not preclude the readjustment of prices within individual schedules to the extent that relationships between prices for similar types of such goods may be modified if this is accomplished without increasing the general price level. Such adjustment, OPA explained, may be effective when warranted through the downward revision of some numbers to compensate for increases in others. This was interpreted by the trade as precluding any advance in the carded yarn ceilings which spinners have been claiming for weeks do not permit them to make a satisfactory margin of profit in view of the substantial increases in raw material and other overhead items such as labor.

### Rayon Yarns

Although the civilian trades, such as women's full-fashioned stockings as well as weavers of dress fabrics, have been obtaining reasonable size deliveries of rayon yarns over recent months, the immediate outlook is less favorable from that standpoint. This is due to the fact that military requirements for rayon yarns have been steadily increasing instead of leveling off. Not only is it expected that there will be a wider use of viscose type this year in military items but it is indicated larger quantities of acetate rayon will also be required. It is pointed out that acetate rayon in England is finding its way in considerable poundage into military cloths. Rayon is now going into a wide variety of war products such as tires of all kinds, fragmentation and cargo chutes, uniform linings and other items. In addition to these uses, the industry has been called upon to take over all of the civilian markets formerly supplied by silk and nylon.

During the first quarter of the present year it is estimated that allocation of rayon yarns for shipments under the Good Neighbor Program together with war uses of viscose and cuprammonium rayon yarn took 45 per cent of the total poundage produced. The further conversion of viscose rayon to the high tenacity types of tire cord, as well as increasing uses of viscose and cuprammonium yarns for other uses will raise the coming war and allocated uses of these yarns to substantially higher levels by the latter part of this year.

### Worsted Yarns

Both shipments and production of sales worsted knitting yarns registered gains in the first quarter of this year compared with the same period a year previous. This was due to two main factors, the first being that military procurement agencies have within recent months been taking much larger quantities of worsted knitted garments for the armed service, such as sweaters, knitted hoods, scarfs and lining cloth. In addition to this spinners have been offering yarns more freely than at this time a year ago when there was considerable uncertainty due to the imposition of a ceiling on yarns at that time. Shipments of Bradford knitting yarns during the first quarter totaled 7,839,000 pounds compared with 6,682,000 pounds in the same quarter of the previous year.

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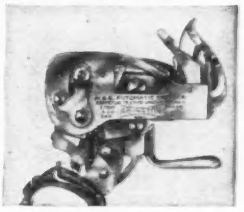

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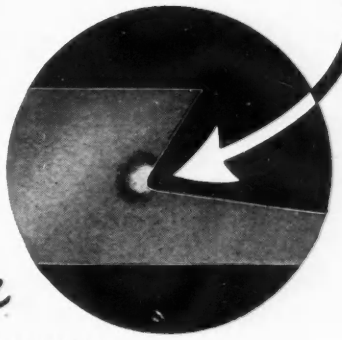

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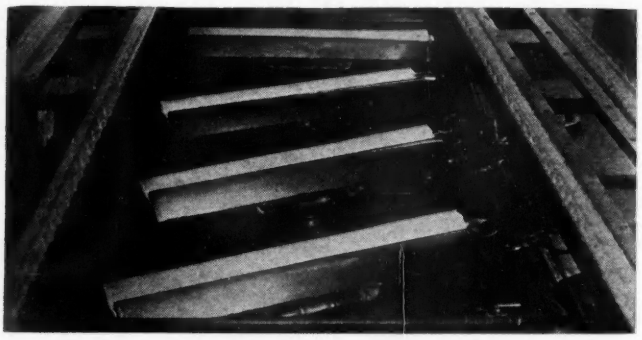

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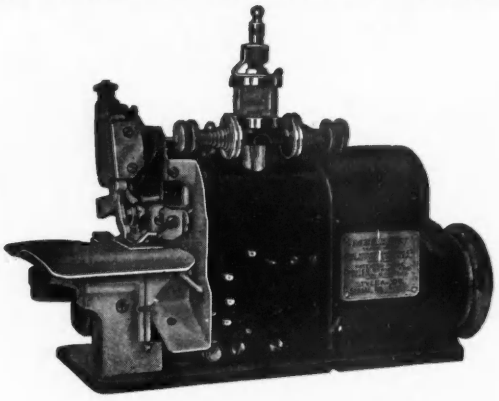

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QUALITY RESULTS
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On "Firing Lines" the world over, consistent, superior performances are the difference between victory and defeat!

Likewise, the right Ring Traveler's superior performance can mean the difference between winning and losing the production battle on your Spinning Room "Firing Line"!

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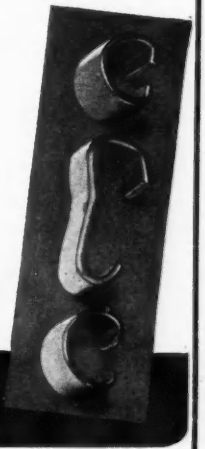

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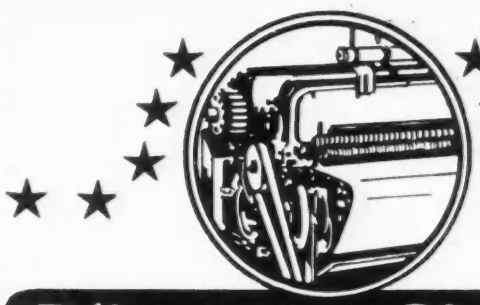

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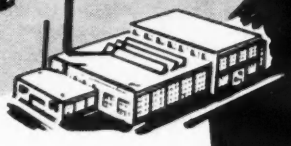

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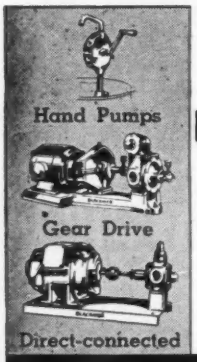


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**DRAX** *provides high water repellency, helps improve hand*

**DRAX** *has an excellent "money value"*

Yes, try DRAX. You'll find characteristics in *this* water repellent not found in many others.

DRAX is an aqueous emulsion of waxes, aluminum salts and emulsifying agents, developed for textile finishers. A special method developed by S. C. Johnson & Son makes colloidal particles of DRAX extremely small and uniform in size. The result is much better impregnation of fibres. You'll find DRAX remains completely stable in solution during storage . . . and that its acidity (pH 3.5 to 5) requires a minimum of control.

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We have developed a special formula to meet the mildew problem. DRAX 1860PMA formula contains sufficient quantity of phenyl mercuric acetate to provide a mildew-proofing which meets the microbiological test for *chaetomium globosum*. *DRAX 1860PMA DOES NOT LEACH OUT.*

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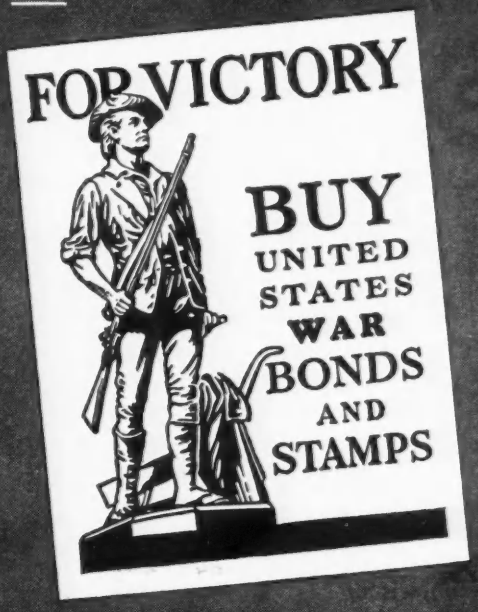


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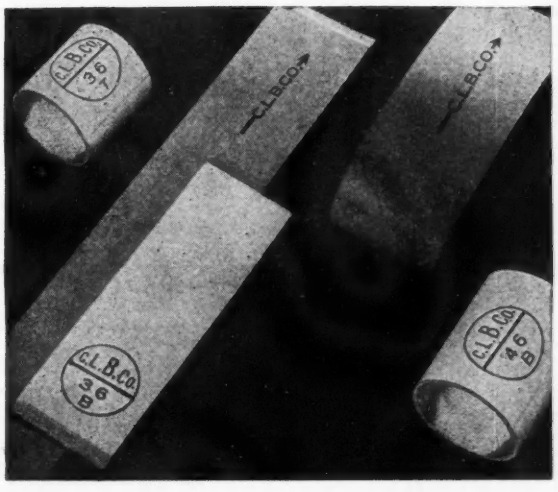
# CHARLOTTE

## *Long Draft Spinning*

# APRONS

**PLEASE . . . *the Boss Spinner***
**MAKE . . . *the P. A. Smile***




**Charlotte Aprons are manufactured to satisfy the Boss Spinner and the man who pays the bills. Because they possess qualities of durability and performance, the Boss Spinner prefers them—because they are priced right, the P. A. smiles and OK's the requisition.**

**The special lap, joined together with a special apron cement made to our own specifications, prevents "pop-outs" and "wrap-ups." These features provide extra spindle production hours and limits time lost in replacements. If you have not tried Charlotte Aprons, write today for full information.**

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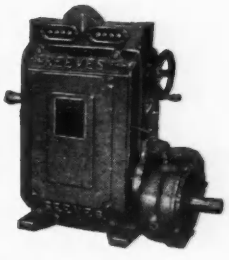
# REEVES Reducer-Type TRANSMISSION

## Combines Variable Speed Transmission and Gear Reducer in Single Compact Unit

● The REEVES Variable Speed Transmission—the textile industry's widely preferred unit for providing accurate, infinite speed adjustability—is now available with built-in, helical-type speed reducer. With this new REEVES drive, the operator of any production machine has a wide range of low driving speeds instantly available in a single compact unit.

The entire range is covered without steps or jumps. Any required speed for best production under each changing condition is accurately obtained by turning a handwheel. It's easy to equip this unit for individual motor drive by means of REEVES adjustable motor base, which accommodates any available motor. Send for 16-page Catalog T-432, giving complete engineering information.



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*Accurate Variable*

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CHANGES

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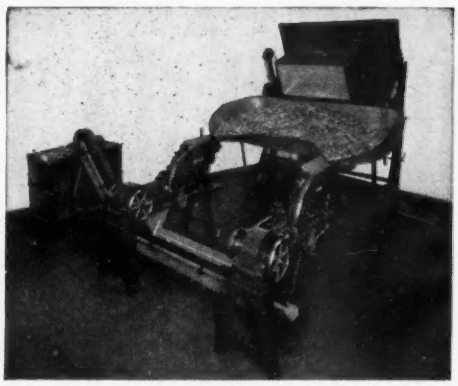

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**The improved TYPE K stripper, Automatic Bobbin Box Hoist and Conveyor Elevator—a modern, compact system for increasing the efficiency and lowering the cost of bobbin cleaning and handling.**

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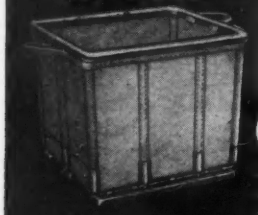

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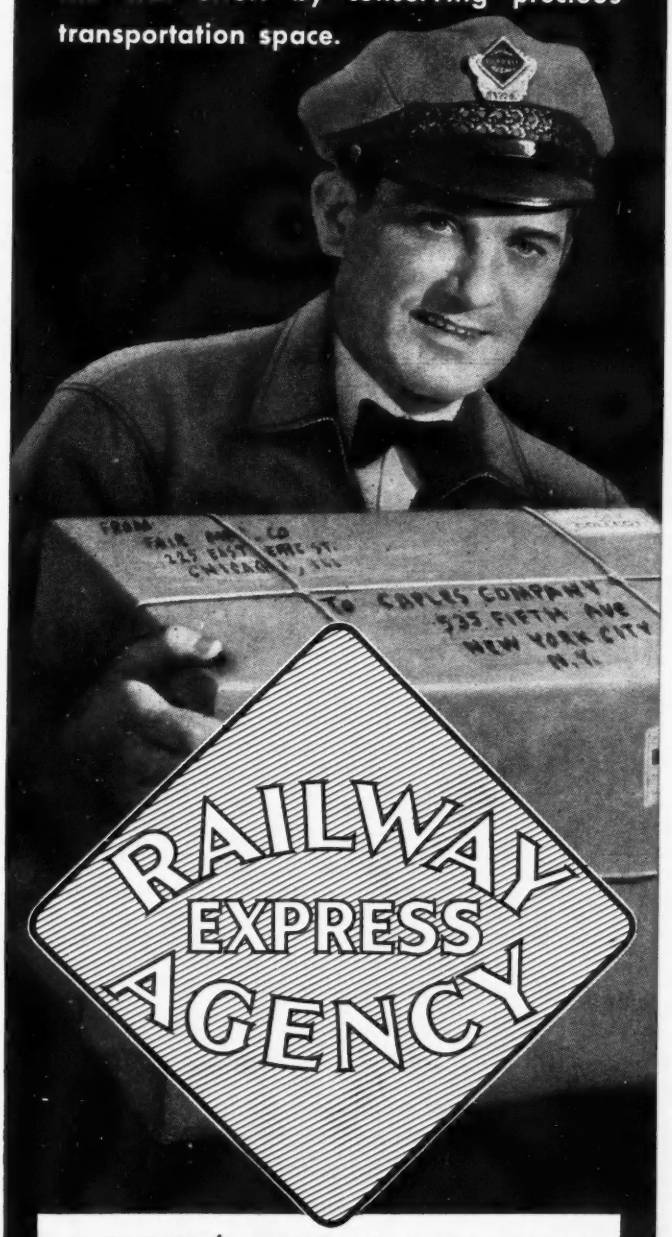


A MINUTE'S CARE IN ADDRESSING MAY SAVE DAYS IN DELIVERY.

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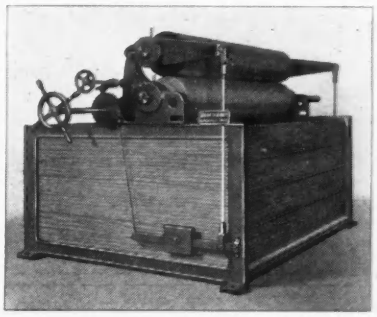

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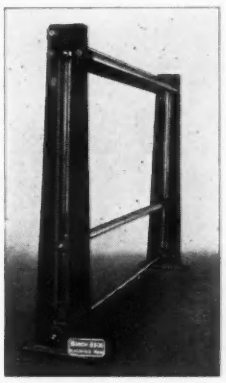
for medium pressure may be fitted with either bushed or roller bearings, for use on dyeing machines, carbonizing machines, continuous crabbs etc. May be mounted on present frames.



## Self-Contained COMPENSATING GATE

for use in controlling the speed of machines running in range. May be used with existing machines or in new installations, to control variable speed drives such as motors or Reeves drives, for accurate synchronization to eliminate uneven tension on cloth being processed.

Single-Bar Curved Rubber Expander with increased thickness of rubber giving longer life and better stretch, and fitted with trouble-proof bushings. Repair parts in stock.

Re-Enforced Adjustable Slot Vacuum Box with Handwheel Adjustment (Patented), with Ring Type Slot Seals. Used on Continuous Crabbs, Scouring Machines, Scutchers, Dryers, etc.

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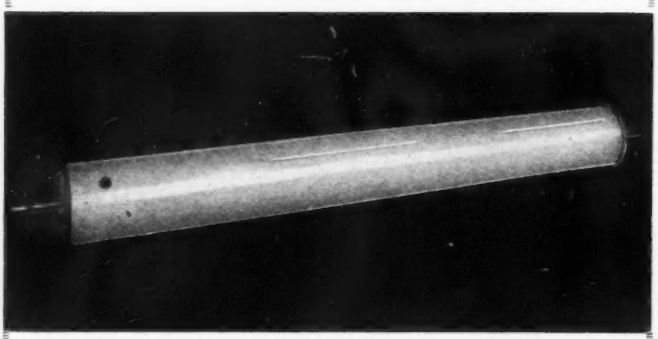
*Dyeing and Finishing Machinery*

AND MILL SEWING MACHINES

*Southern Representative*

JOHN C. COSBY, Greenville, S. C.

*Prompt* **REBUILDING** *Service*



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**The promptness of Jenkins' rebuilding service eliminates expensive stops. New screens and cylinders shipped same day order is received.**

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**They Take Tough Punishment**

Bump, bang, crash! Dozens of times every day trucks are abused.

Fairbanks Platform Trucks are so ruggedly built that shocks and jolts have practically no effect on them. Even if boards become broken or worn, they can be replaced easily and cheaply.

Handles, racks and wheels also can be replaced or changed.

Write for catalog No. 52.

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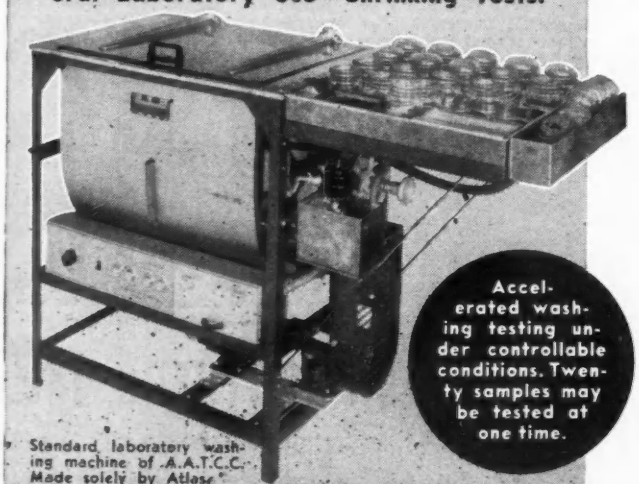
**Fairbanks** PLATFORM, HAND and BOX TRUCKS

**LAUNDER-OMETER**

**for Washing Tests—Mechanical Action—Color Fastness and Staining Tests—Detergent Tests—Fastness to Fulling Tests—Leather Dyeing Tests—Dry Cleaning Tests—Vat and Sulphur Dye Tests—General Laboratory Use—Shrinking Tests.**



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Standard laboratory washing machine of A.A.T.C.C. Made solely by Atlas.

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**ATLAS-OMETERS**

WEATHER-OMETER ★ LAUNDER-OMETER ★ FADE-OMETER

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We have built a reputation that is known over the entire South by our special attention to the minutest detail.

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Victor representatives are mill-trained men. They understand your problems because they have been up against similar problems while gaining their own experience with spinning and twisting, and other mill processes. Add to that what they learn in daily contact with hundreds of busy mills, and you have a fund of "know how" that is of exceptional value to supervisors in need of ***helpful*** advice.

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GASTONIA, N. C
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**VICTOR**
***Ring Travelers***

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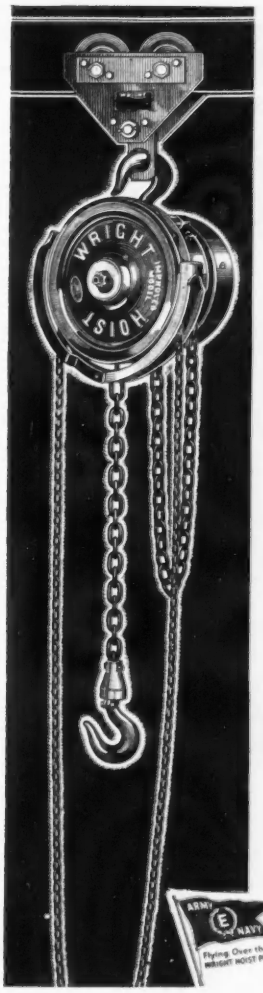


In these days of shortages we don't need to know how to choose a new hoist—but how to use an old one more efficiently, and how to make it last longer.

So—get busy with the grease gun! Where properly lubricated and maintained, many **WRIGHT HOISTS** have given constant, trouble-free service for 20 and 25 years. We have known other hoists to be so badly abused they were ruined in two years. Your **WRIGHT HOIST** will last indefinitely if you treat it right.

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Conserve steel and maintain production schedules by regular inspection and lubrication.

*In Business for Your Safety*

**WRIGHT MANUFACTURING DIVISION**
York, Pa., Chicago, San Francisco
New York

**AMERICAN CHAIN & CABLE COMPANY, INC.**
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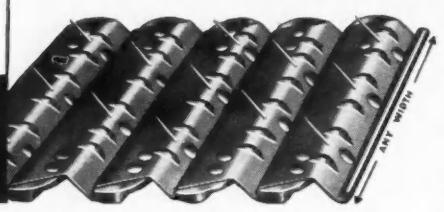
# Knotwood

U. S. PAT. NO. 2258035

## HOPPER APRONS



FOR ALL TYPES OF AUTOMATIC FEEDS

## YOU GAIN 6 WAYS!

**1.** More and better production, because sprocket drive eliminates slip. **2.** Fireproof. **3.** Less upkeep due to all metal construction (pins ground, heat treated and polished). **4.** Less dirt. Knotwood stays bright and clean. **5.** No choking or excessive waste. Stock can not work between interlocking slats. **6.** Save power. The Knotwood is light and works quite slack.

***More than 1000 in use.***

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LAWRENCE, MASSACHUSETTS

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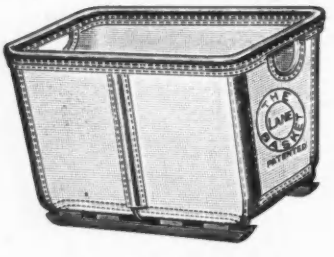

STYLE 20.

# LANE

The **IDEAL BASKET** for

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**RIBBERS**

**GENERAL**

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*Manufacturers* : POUGHKEEPSIE, N. Y.

## THIS NAME IDENTIFIES EFFICIENT, DEPENDABLE TEXTILE CHEMICALS

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**PRODUCTS**

It guarantees that these preparations are of uniform purity and strength, made under strict laboratory control, by tested and approved formulas.

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HYDROXY* WATER-SHIELD "D"

HYDROXY WATER-SHIELD and MILDEWPROOF No. 1

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for burlap and osnaburg for sand bags.

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Manufacturing Chemists

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**TANK BUILDERS for 88 YEARS**

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STARCH KETTLES
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BOILERS
KIERS
AIR RECEIVERS
STORAGE BINS
SMOKE STACKS
STAND PIPES

IF it can be fabricated of steel plate, we have the facilities and the experience to do the job.

**R.D. COLE MFG.CO.**

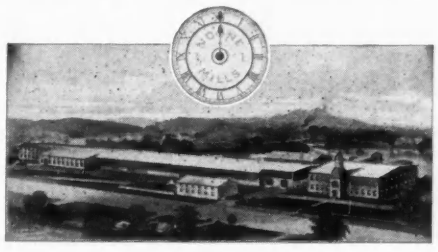
*Established 1854*

NEWNAN GEORGIA

# WILLIAM R. NOONE & COMPANY

A. ERLAND GOYETTE, President
ARNOLD T. MALONE, Treasurer

**105 Washington Street**
**Boston, Massachusetts**



*Established 1831*

## Noone's Standard Slasher Cloths

Ask for NOONE'S SLASHER CLOTHS by name or style number.

Long experience in manufacturing Slasher Cloths and continuous experimenting have enabled us to produce several types of Slasher Cloth, each especially constructed to give best results on the particular kind of yarn to be sized.

The proper Slasher Cloth for each type of yarn means properly sized warps, less loom stops, easier weaving, more and better production, *and lower cost*. We can supply you the right cloth for your particular work.

On request, we will have our representative call and discuss Slasher Cloths with you.

We are the oldest manufacturers of Slasher Cloth in America. Our experience enables us to build a Slasher Cloth that will meet your most particular demand. Use NOONE'S SLASHER CLOTHS and be convinced.

**Sole Agents for**

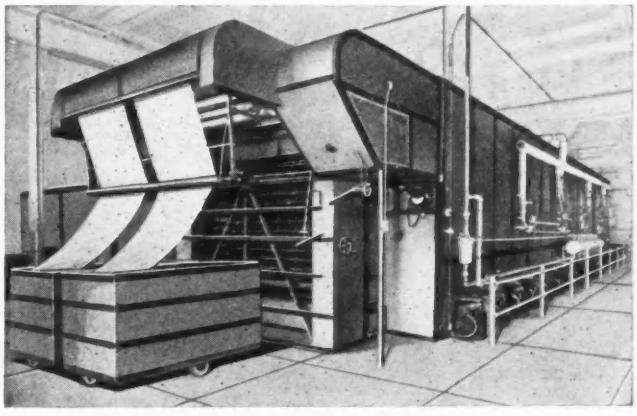
**The Joseph Noone's Sons Company**

**Peterborough - - - - - - - New Hampshire**

***Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.***



# "What Do You Mean by *Fast Drying?*"



## Our answer is that on a "NATIONAL" AUTOMATIC PIECE GOODS DRYER

fast drying means (1) drying cotton, woolen, rayon or mixed piece goods at *greater speeds* than those obtainable with any other machine of similar type; (2) maintaining absolutely *uniform drying quality* at these higher speeds; and (3) procuring the resultant increased production at a surprisingly *low cost* for operation and maintenance. Another factor is that even when light and heavy goods are run through side-by-side in a multiple-width dryer, the rate of drying the *heavy* goods, which governs the speed for both, permits accelerated production only possible with a "NATIONAL" machine.

Write for details of other advantages provided by patented features of "NATIONAL" design and construction. Perhaps some of these can be incorporated in a re-build of your present equipment.

Automatic Loop Dryers
Package Yarn Dryers
Print Goods Dryers
Truck Type Skein Dryers

Straight Run Tenters
Return Type Tenters
Apron Stock Dryers
Continuous Yarn Dryers

**THE NATIONAL DRYING MACHINERY CO.**

**N. HANCOCK ST. and LEHIGH AVE., PHILADELPHIA, PA.**

**New England Agent: C. H. INGALLS, Providence, R. I.**

*Consulting Engineers*
TO THE
**TEXTILE INDUSTRY**

*for* OVER THIRTY YEARS

★ OPERATING METHODS
★ MECHANICAL SURVEYS
★ COST METHODS
★ COST CONTROL
★ MODERNIZATION COUNSEL
★ SPECIAL PROBLEMS

**BARNES**
**TEXTILE ASSOCIATES INC.**
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IMPROVED
**SINGEING**
WITH
**RED-RAY**
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Provides Closer — Better — Faster Singeing — Lower Production Costs. Easily Installed on Your Present Equipment.

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**When you leave for Atlanta** . . . tell the home folks — and your Secretary—that you can be reached at the Atlanta Biltmore — the preferred hotel for those on business, or pleasure, or both. You'll find it the next best place to home—convenient to everything, yet comfortably quiet—clean, modern appointments, and unsurpassed service — that's why it is called "The South's Supreme Hotel." Make your reservation now! *Rates from $3.00.*

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**BILTMORE**
"THE SOUTH'S SUPREME HOTEL"

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**. . give *good* service as a matter of course; they are popular because of their *friendly* service, which combine to make *better* service . . .**

*You will enjoy living in Dinkler operated hotels*

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★*The TUTWILER BIRMINGHAM
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OPERATING 3000 ROOMS IN SOUTHERN HOTELS

## They Fit Your Present Hanger Frames

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No new frames needed to change over to Chapman ball-bearing equipment! Labyrinth grease shield excludes dirt and moisture, prevents dripping and throwing. Balls used are approximately double the size used in any other make of ball bearing, thus providing heavier load carrying capacity.

ANTI-FRICTION BEARINGS • ENGINEERING SERVICE • TRANCO TRUCKS

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WITH SOUTHERN FACTORING YOU . . .

Eliminate CREDIT RISKS
Abolish COLLECTION COSTS
Increase WORKING CAPITAL
Concentrate on PRODUCTION AND SALES

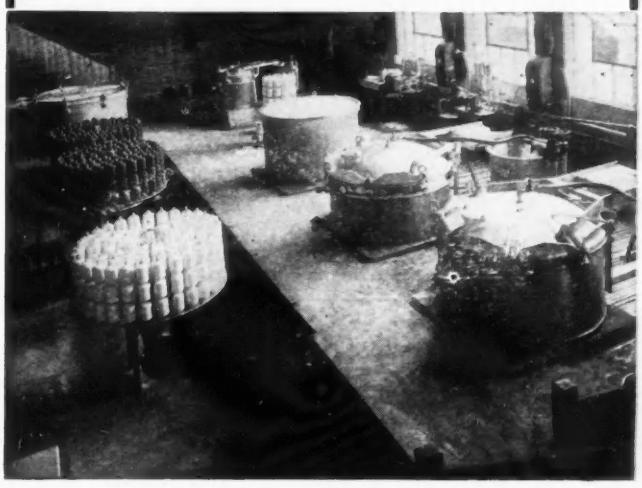
INCREASED PROFITS

INQUIRIES INVITED

FACTORING DIVISION
TRUST COMPANY of Georgia
ATLANTA

# Obermaier

REG. U. S. PAT. OFFICE



*Package Dyeing Installation, Extracting and Drying in a complete cycle on the same material carrier*

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*Builders of*

Cotton & Wool Dyeing Machines
*for*
Beams • Packages • Rawstock • Skeins

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Centrifugal Extractors and Driers

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Dye Spindles and Perforated Tubes

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STAINLESS STEEL CONSTRUCTION

*All Subject to Required Priorities*

☆

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INCORPORATED

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*Replacement Parts For Existing Machines Can Be Furnished*

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Box number address care of COTTON, Grant Bldg., Atlanta, Ga., count as eight words.

## FOR SALE
## CRITICAL PRODUCTION EQUIPMENT

3—80 spindle and 3—104 spindle Hopedale Twisters; 4½" rings, 5½" gauge, Band Driven Spindles, Belt Driven.
1—500 lb. Boiling and Bleaching Kier.
1—28 stick Klauder Weldon Monel Lined Non-Hoist Skein Dyeing Machine, motor driven.
1—28" Laundry Type, belt driven, full open top Copper Basket Extractor.
1—Proctor 2-truck Yarn Dryer with four trucks.
3—Copper Jacketed Tilting Type Motor Driven Color Mixing Kettles.
1—set of 23 Lincoln Dry Cans, copper covered, 23" dia. by 88" face, complete with horizontal frames, gears, bearings, etc.
1—66" Voelker Double Bed Rotary Cloth Press.
1—60" Tolhurst Hydro Extractor, underneath vertical motor drive, 3 phase, 60 cycles, 550 volts with starter.
1—48" Tolhurst Copper Basket Belt Driven Self-Balancing Extractor.

MACHINERY LIQUIDATING COMPANY
39 W. 42nd Street New York, N. Y.
*Telephone: PEnnsylvania 6-8014*

## USED MACHINERY FOR SALE

13—150 H.P. each Fairbanks, Morse, horizontal diesel engines. Water tanks on towers and industrial equipment. INDUSTRIAL SUPPLY & EQUIPMENT CO., INC., 1044 Canal Bldg., New Orleans, La.

## WANTED

Overseer of spinning between ages of 35 and 55, high school education preferred. Only those with experience in running large rooms and capable of commanding top salary need apply. Address Box 629, COTTON, Grant Bldg., Atlanta, Ga.

## WANTED

Skilled inside factory man capable of running textile coating machine and train help. Confidential replies to Box 633, c/o COTTON, Grant Bldg., Atlanta, Ga.

## WANTED TEXTILE MAN TO SUPERVISE WAR CONTRACTS

Exempt from draft, capable of assuming complete supervision of converter's office; one who has had experience in actual contact with the various Government Purchasing Agencies, who is willing to travel wherever necessary in the capacity of liaison-man between these Agencies, finishing plants, etc.

Must be familiar with the products of, and have contacts with, the various greige mills and their selling agents, be able to attend to the purchase of greige goods, supervise the preparation of processing instructions to the finisher and exercise general supervision over all Government contracts. Must be familiar, at all times, with all priority and price control regulations affecting the industry.

State age, experience, salary required and when available. Address Box 632, c/o COTTON, Grant Bldg., Atlanta, Ga.

## COTTON MILL MAN WANTED

We have been asked to locate a cotton manufacturer, preferably a textile school or technical graduate with practical experience in carding, spinning and weaving. He should be of superintendent caliber, able to figure costs unaided; must have had a wide experience and the ability to get along with people. This position will pay a good salary to start and the prospects for the future are very promising. Address in confidence. Charles P. Raymond Service, Inc., 294 Washington St., Boston, Mass. Over forty years' confidential employment service for employers seeking men and men seeking positions.

## WANTED

Personnel manager for cotton mill of about twelve hundred employees, capable of taking complete charge of the personnel work. Please give age, experience and salary desired. Address Box 627, COTTON, Grant Bldg., Atlanta, Ga.

## WANTED

Overseer of weaving between ages of 35 and 55, high school education preferred. Only those with experience in running large rooms and capable of commanding top salary need apply. Address Box 628, COTTON, Grant Bldg., Atlanta, Ga.

## Your Advertisement on This Page

will produce results at small cost. Do you desire a position? Do you desire a good man to fill a vacancy in your mill? Do you desire your business or professional card placed before the textile industries?

Why not try an advertisement on this page of COTTON? Its 12,250 copies per month reach the textile executives, superintendents and heads of departments throughout the industry.

Send in your advertisement today.

**COTTON**
GRANT BLDG. ATLANTA, GA.

## PAUL B. EATON

*Patent Attorney*
1208 Johnston Bldg., Charlotte, N. C.
514 Munsey Bldg., Washington, D. C.
*Former member Examining Corps*
*U. S. Patent Office*

## POSITION WANTED

Overseer carding wants change. Have fine record for quality and quantity. Small family. Good reference. Address Box 626, COTTON, Grant Bldg., Atlanta, Ga.

Dr. Kee Pum Running Tells How to

# FIGHT DUST *before it ruins your motors*

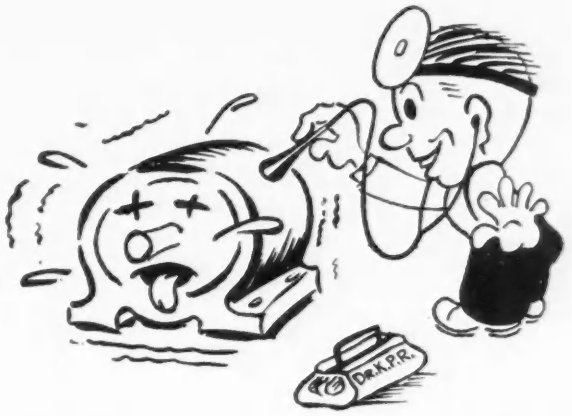
Dust is an enemy of electric motors that is relentless in its grinding action. Dust works its way into bearings and acts as an abrasive . . . gets inside the wound section, soaks up oil and water and forms a harmful, gummy mess. On slip rings and commutators, dust is an abrasive and an insulator that increases wear and blocks full flow of current.

The time to arrest dust is before it can work with water and oil to form gum. Wipe motors frequently. Wipe the housings, slip rings and commutators. Dust can be blown out of the wound section by air of fairly low pressure (35-40 lbs). Hand bellows can be used if no compressor is available. Dust may also be removed by suction.

See that oil filler caps are always closed. Dust seals and gaskets should be kept in good condition.

In case dust has already united with oil or water to form gum, it should be removed with some solvent. A good non-inflammable one is carbon tetrachloride. Use the solvent freely, but do not *soak* the insulation. When foreign matter has been removed, dry the windings and apply an insulating varnish.

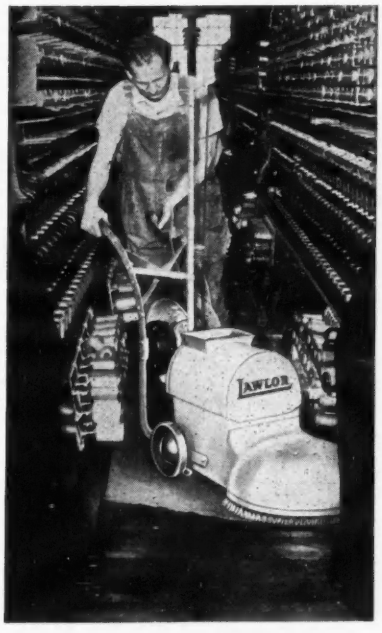
Henderson hopes these timely tips on motor conservation will be of some help to you. Henderson Foundry and Machine Company does not make motors, but offers these facts to help you conserve your motors. Henderson does, however, manufacture dependable, long-lasting repair parts for textile machinery that will reduce your maintenance problems, increase production and conserve machines. Next time you order repair parts for your textile machines, specify *Henderson* for parts that really fit.




In the meantime, send along some of your maintenance ideas to Dr. Kee Pum Running for use in this series of maintenance messages. You will be given full credit for your ideas. Send them care the Maintenance Clinic, Henderson Foundry and Machine Company, Hampton, Georgia.

Henderson Repair Parts
FOR TEXTILE MACHINERY
HENDERSON FOUNDRY & MACHINE CO., HAMPTON, GA.

## TAKE GOOD CARE of your LAWLOR FLOOR EQUIPMENT




Every owner of Lawlor Scrubbing, Waxing, Polishing Machines, Mop Wringers and Tanks, is cautioned to keep them in best running order.

**REPAIR PARTS AVAILABLE**

Check over all your Lawlor Machines and equipment and let us furnish you with any needed repair part to keep them operating efficiently.

We want to aid all our customers in every way we possibly can.

**S. C. LAWLOR COMPANY**

*Makers of Quality Floor Equipment for 40 Years*

121 N. Aberdeen St., Chicago, Ill.

PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS

NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA

SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John:
Let's get a P & F technical service man to help us with our problem.
Understand they are capable and experienced.
Jim

TEXTILES' VITAL ROLE IN WINNING THE WAR
(NO. 4 OF A SERIES)

SELECTED FOR SERVICE!

Uncle Sam has put in a call for millions of yards of textiles to meet the specialized needs of our armed forces. America's mills have answered that call! Those millions of yards *are* being turned out—right on schedule. Undreamed of production standards are being set—maintained—and bettered.

The Burkart-Schier Chemical Company, pioneer in the development and manufacture of wet processing agents for yarns and piece goods, is playing an active part in this vital work. For Burkart-Schier chemists and textile chemicals are working right along with America's mills, helping to scour, mercerize, bleach, dye, and finish all sorts of yarns and fabrics—making those fabrics fit to fight!

BURK-SCHIER

**BURKART-SCHIER CHEMICAL CO.**

*Manufacturing Chemists for the Textile Industry*

CHATTANOOGA, TENNESSEE

PENETRANTS • DETERGENTS • SOFTENERS • REPELLENTS • FINISHES

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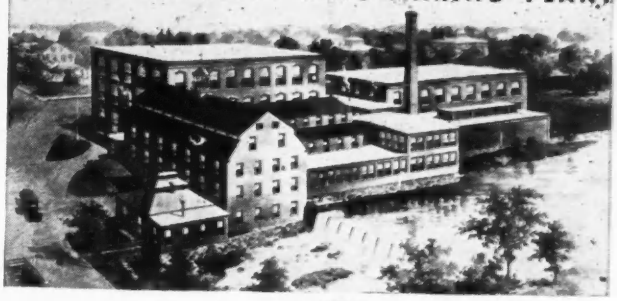

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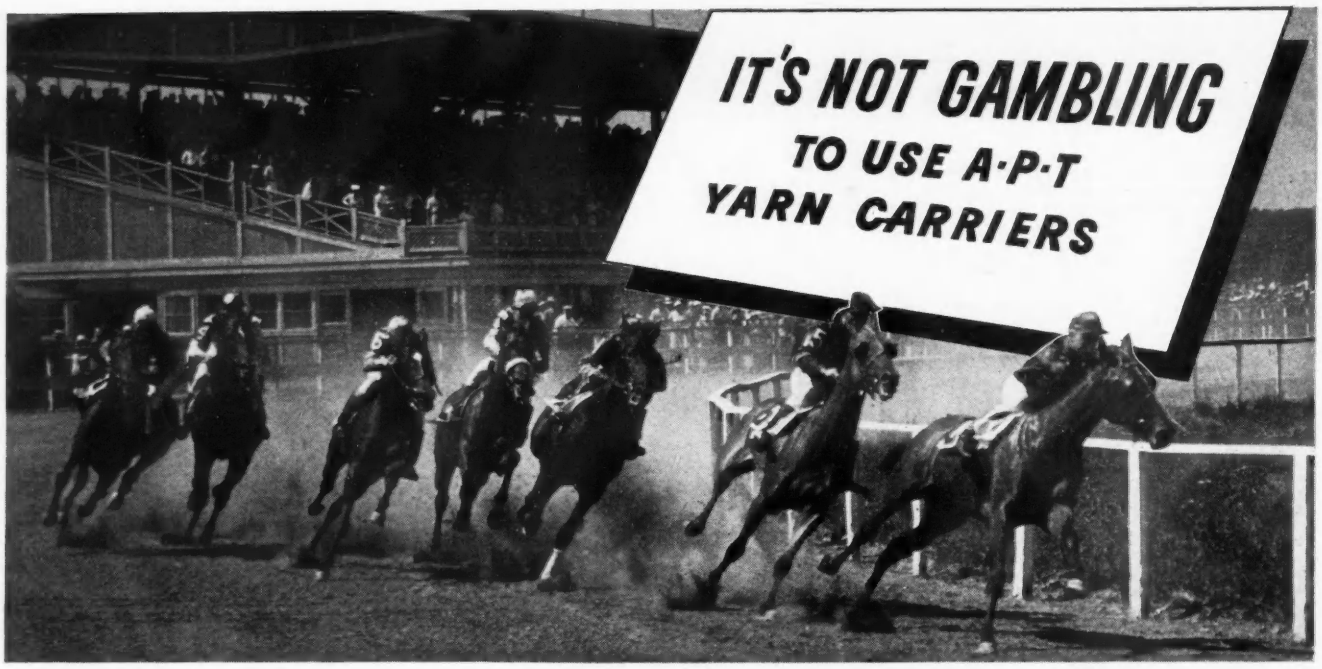
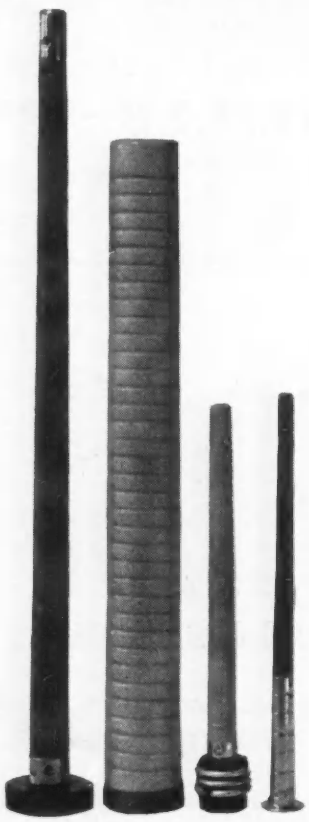


# IT'S NOT GAMBLING TO USE A·P·T YARN CARRIERS



IT MAY BE FUN TO TAKE A LONG CHANCE OR A HOLIDAY BUT YOU CAN'T AFFORD TO DO IT IN BUSINESS. MILLS USE A. P. T. YARN CARRIERS BECAUSE THEY OFFER **14 CHANCES TO WIN,** NO CHANCE TO LOSE. **HERE ARE THE 14 CHANCES:**

**1. Less Wear on Spindles,** because these carriers have perfect balance and thus reduce vibration. They're "built around the hole", and therefore are always concentric with the spindle.

**2. No Distortion of Carriers** from steaming or similar causes. They're impregnated for water repellency.

**3. No Splinters.** Smooth hard surface does not catch yarn

**4. Free but Controlled Delivery.** A natural result of smooth surface, deep, well rounded corrugations and freedom from distortion.

**5. Practically No Chipping or Splitting,** because of "built up" construction,—layer on layer of tough paper glued together.

**6. No Slippage on Spindle.** Have perfect spindle cling due to resiliency.

**7. Resiliency.** Even if bent by abusive handling, these carriers will usually straighten out on the spindle.

**8. Saving in Power** in some cases due to light weight.

**9. Minimum Breakage,** due to great strength in view of light weight.

**10. Long Life,** resulting from their strength and resistance to distortion, splintering, etc.

**11. No Static,** which is often a great advantage.

**12. Larger Capacity** in some cases due to comparatively thin wall and small diameter (if desired).

**13. Yarn Protection** due to absence of splinters or rough places.

**14. Ultimate Low Cost** due to operation economies, long life, etc.

★

**TELL US YOUR PROBLEMS AND LET US MAKE SUGGESTIONS**

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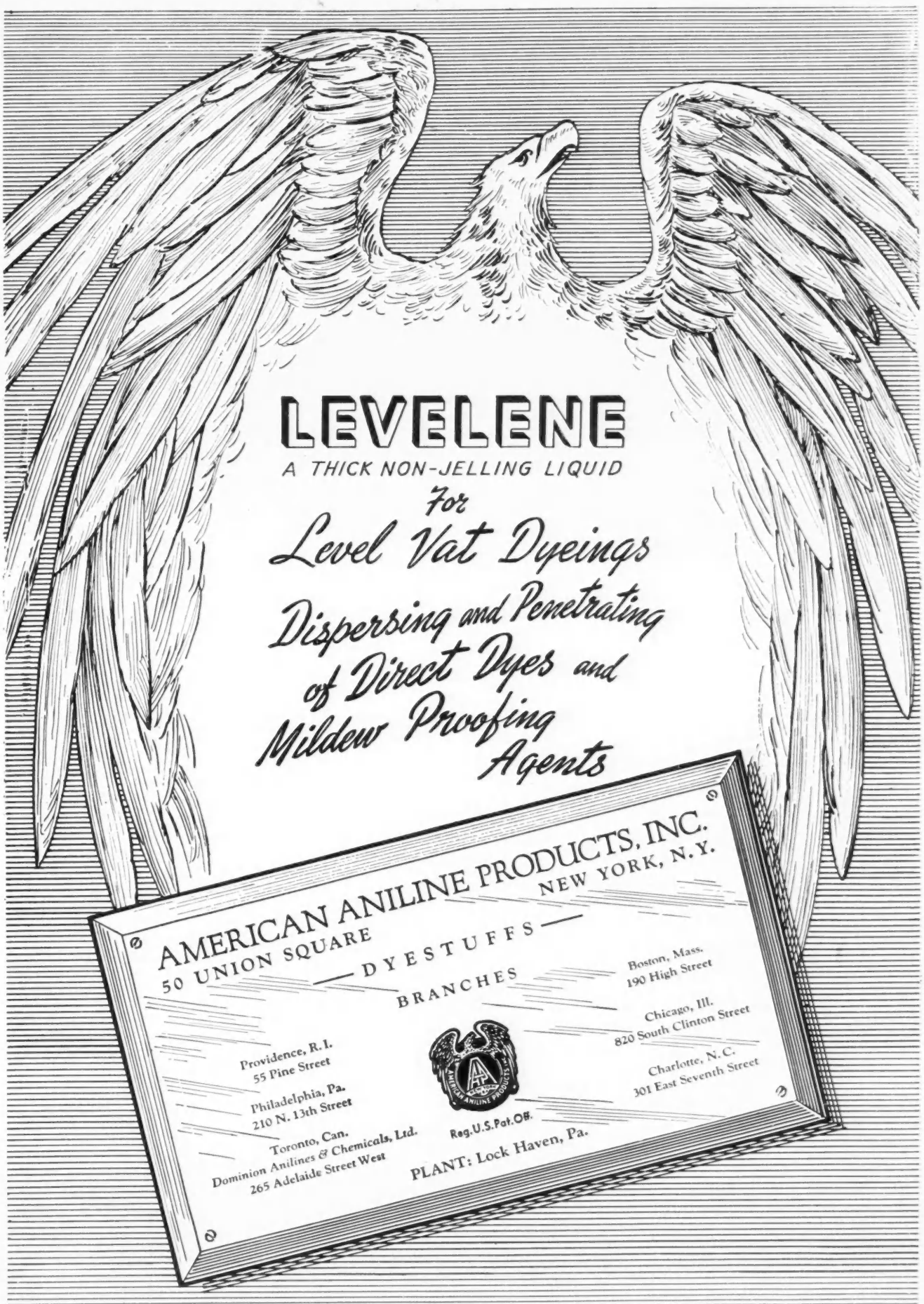
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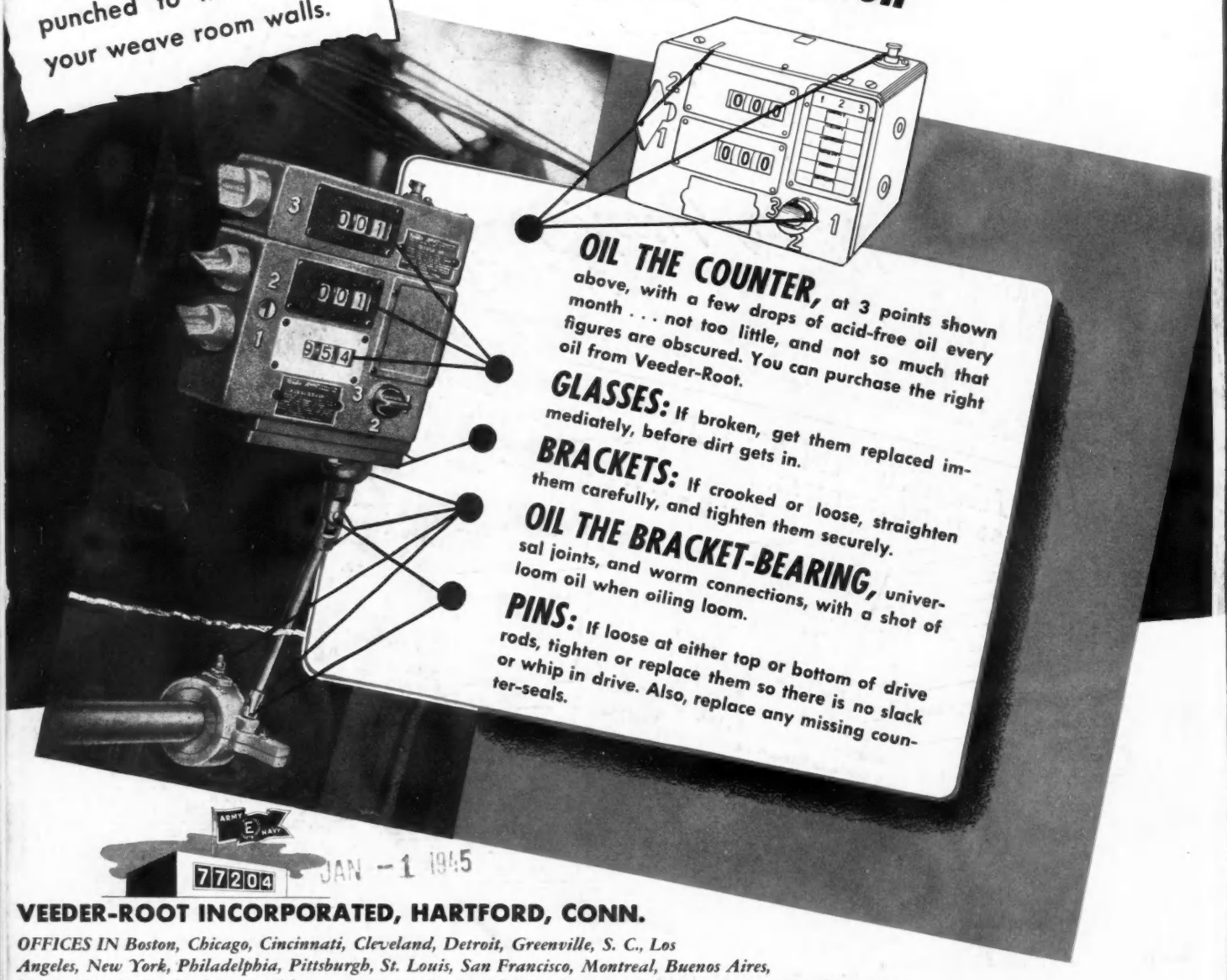
# NEW...Free Check Chart

## Make this Regular Quick Inspection of all VEEDER-ROOT 2-3 PICK COUNTERS in order to "Keep 'em Counting" . . . for the Duration

Write us how many looms you're running, and we'll send you an adequate supply of these 8½" x 10½" cardboard cards, ready punched to hang up on your weave room walls.



**OIL THE COUNTER,** at 3 points shown above, with a few drops of acid-free oil every month . . . not too little, and not so much that figures are obscured. You can purchase the right oil from Veeder-Root.

**GLASSES:** If broken, get them replaced immediately, before dirt gets in.

**BRACKETS:** If crooked or loose, straighten them carefully, and tighten them securely.

**OIL THE BRACKET-BEARING,** universal joints, and worm connections, with a shot of loom oil when oiling loom.

**PINS:** If loose at either top or bottom of drive rods, tighten or replace them so there is no slack or whip in drive. Also, replace any missing counter-seals.

ARMY E NAVY
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